SD Times
SOFTWARE DEVELOPMENT
The Industry Newspaper for Software Development Managers

JUNE 15, 2005
ISSUE NO. 128

Sun, IBM Beat SOA Consulting Paths 5
Executive Exodus Worries Novell Observers 5
Catalyst Accelerates Build Management 6
Worlds of Defect Tracking And Vulnerabilities Collide in Klocwork's K7 7
Michael Stonebraker Wins IEEE's von Neumann Medal ..8
Borland's JBuilder: Based On Eclipse By 2006 10
ComponentOne Updates Its Arsenal Of .NET Components 10
LogicLibrary Tackles Governance, Asset Sharing ..11
Sabbah Takes Helm At IBM Rational 12
MyEclipse 4.0 Adds UML, JSF Modeling 15
Three Start-Ups Release Management Tools Focused On Business Processes 18
AMD Says Faster *x*86 Chip Keeps Its Cool 27
PalmSource: Professional Developers In, Palm Brand And Nagel Out 27

COLUMNISTS

O'BRIEN:
Global Mobile 35
HOLUB:
JavaOne And Stalinist Management 37
BINSTOCK:
Virtualization: Why You Should Care 37
RUBINSTEIN:
The Next Four Horsemen ..38

A BZ Media PUBLICATION $7.95
www.sdtimes.com

WIND RIVER EXECUTES 'A 180-DEGREE TURN'

In three years, embedded leader turns from proprietary to major Linux player

BY EDWARD J. CORREIA

The transformation of Wind River Systems is complete. The embedded giant, seen only a few years ago as the leader of a diminishing group of proprietary software vendors, last month announced that it will develop its own distribution of Linux. This caps a remarkable transition that began with a failed attempt to buy its way into the open-source arena with BSD Unix.

The announcement came at the company's annual user conference in Orlando, Fla., where it also unveiled a new Linux- and VxWorks-based platform for consumer devices and Workbench 2.3, its latest Eclipse-based IDE.

Wind River's first attempt to compete with Linux was in 2002, when it launched BSD/OS, using technology acquired from BSD Unix from Berkeley Software Designs a year earlier. It withdrew the product from the market in November 2003, and the following February partnered with Red Hat on its Linux strategy.

The company hinted that it might develop its own Linux distribution as early as 2003, when

▸ continued on page 26

Looking For An Easy Way Out of WSDL

Sun's Bray, Walsh propose alternatives

BY YVONNE L. LEE

Two of Sun's sharpest engineers think that one of the bedrock specifications for Web services is too difficult to use, so they've proposed alternatives.

"If you print out the WSDL 2.0 specification, it comes to 140 pages or something like that," said Tim Bray, director of Web technologies at Sun and co-inventor of XML. "It's not light reading. You're not in Stephen King territory. It's densely loaded with abstractions."

XML standards architect Norman Walsh said he encountered difficulty when he tried to build a Web service and wanted to describe it.

"It was not clear to me at all where to start because it's all very abstract. It's designed to be flexible in every conceivable way," he said.

The two said they felt the WSDL specification was trying to be too broad and applicable in too many different situations.

"It doesn't presuppose that you're actually using the Web; it doesn't presuppose the basic client/server model that the Web is based on. It doesn't presuppose that you're transmitting via HTTP," said Bray.

Simplicity is just as important as generality, says Sun's Bray.

This, he said, takes away from the ease of use that builders have come to expect from the Web.

"There's an important issue of psychology here," said Bray, referring to one of the ways the Web is different from other software. "It's the 'view source

▸ continued on page 16

First Impressions of Team System

Beta users hail collaboration server, price reduction

BY JENNIFER DEJONG

"Team Foundation Server sure beats SourceSafe."

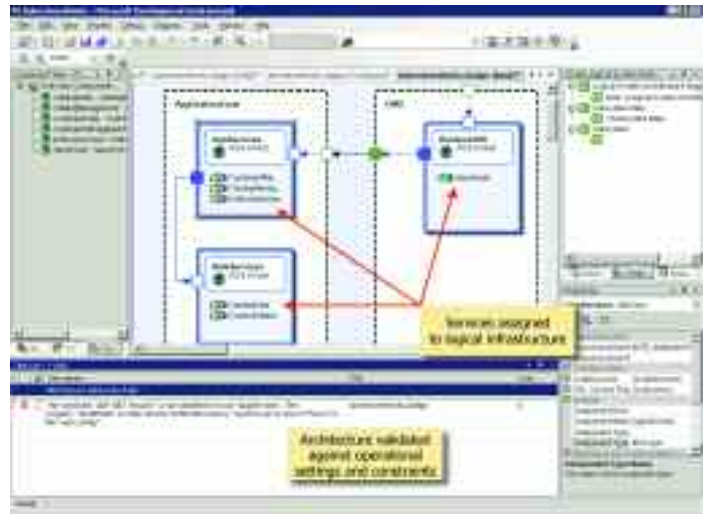
"It's cost-prohibitive for small shops."

"It's not that hard to build good apps anymore."

"We aren't going live on this."

Those are just a few of the things .NET developers had to say about Visual Studio Team System. As they wait for Microsoft's life-cycle offering, now promised for year's end, they are rolling up their sleeves, building applications with the

▸ continued on page 22



Microsoft's forthcoming Logical Datacenter Designer will enable users to model all operational aspects of a datacenter.

SPECIAL REPORT
What's Holding Back OMG's Model Driven Architecture? 28

KODERS IS LIKE GOOGLE FOR CODE

Open repository finds functions

BY EDWARD J. CORREIA

If you can imagine a Google search that yielded nothing but open-source code snippets, you've got a pretty good picture of Koders.com. Launched in mid-May by Koders Inc., it's a free Web-based server that produces nearly instantaneous results from a repository of the world's open-source projects; nearly 200 million lines of code in all.

The company this month is set to release free plug-ins for Visual Studio and Eclipse that will bring the search capability directly into those environments.

"The No. 1 use case is to

▸ continued on page 14

SIAMESE FIGHTING FISH ATTACK AND KILL EACH OTHER IF PUT IN THE SAME ENVIRONMENT.

ENTERPRISE APPLICATIONS OFTEN BEHAVE SIMILARLY.

© 2005 Microsoft Corporation. All rights reserved. Microsoft, the Windows logo, Windows Server System, and "Your potential. Our passion." are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.

Your potential. Our passion.™
Microsoft

WINDOWS SERVER SYSTEM WITH .NET REDUCES THE HASSLE OF APPLICATION INTEGRATION.

Do CRM and supply chain applications really hate each other? Though it may seem so, there's really just a technical misunderstanding at the heart of the problem. Windows Server System™ is designed to help smooth out those misunderstandings. How? The key to this capability is Microsoft® .NET.

The .NET Framework, which is an integral component of Windows Server System, is the development and execution environment that helps your different components and applications work together quite seamlessly. That means applications are easier to build, manage, deploy, and integrate. Whether you're rolling out a new ERP solution or putting together multiple systems during a corporate merger, we've got good news for you: The .NET Framework uses industry standards such as XML and Web Services which allow enterprise applications to be more seamlessly connected to your existing infrastructure. In addition, the productivity-enhancing features of .NET, such as automatic mapping of data to and from XML, also help you to simplify integration by reducing the amount of code required to get it all accomplished.

So it seems you have the power to stop the attacking and the killing of innocent applications, and to help them integrate peacefully. We encourage you to use that power. Find out more about application integration with Windows Server System and .NET: Get the Connected Systems Resource Kit by pointing your browser to microsoft.com/connectedsystems

WITH WINDOWS SERVER SYSTEM AND .NET, YOU CAN OVERCOME INTEGRATION ISSUES. HOWEVER, WINDOWS SERVER SYSTEM IS USELESS AGAINST THE SIAMESE FIGHTING FISH.

Microsoft® Windows Server System™

InstallAnywhere 7

New!

The most powerful installation solution for multiplatform software deployment and configuration.

- Extensive Platform Support
- One Project - All Platforms
- Localized Designer
- Localized Installers
- MSI Build Option
- Handles Platform Specific Details
- Intelligent, Flexible, Component-Based Installations
- Team Development
- Intuitive, Easy to Learn and Use
- Ideal for J2EE and Web Services Deployment
- LaunchAnywhere
- Automatic Java VM Installation

Download today at ZeroG.com

Sun, IBM Beat SOA Consulting Paths

Service plans specific to architecture concept designed to educate enterprises

BY YVONNE L. LEE

Sun and IBM in late May introduced consulting services for developing service-oriented architectures.

Sun's offering, called SOA Path, is part of Project Kitty Hawk, which the company announced at JavaOne 2004 as an effort to use its Java Enterprise System as part of such architectures. IBM's Business Integration Adoption Model is an expansion of previous IBM SOA consulting services.

Vendors, including Software AG with its SOA Competency Center and BEA with its Project Free Flow, are introducing these programs because the business case for service-oriented architectures is not readily apparent, said Steve O'Grady, senior analyst at RedMonk.

"SOA is still an educational challenge for vendors. Enterprises still have questions about what an SOA is," he said.

Thus, Sun and IBM are rolling out SOA-specific service plans. "You think of Sun as a product company," said John Rymer, vice president of Forrester Research. "They do have services. What those service personnel primarily do is help people design and implement Sun products." IBM Global Services has a more neutral service reputation, to the point that Steve Mills, senior vice president and group executive for IBM Software, started a separate consulting organization to promote the company's own software, according to Rymer.

SUN'S SOA PATH

According to Ashesh Badani, Sun's group marketing manager for SOA, his company's consulting services are designed to help with short-term projects that can be completed in 12 to 18 months.

Sun's SOA Path has five offerings: SOA Jumpstart Workshop, SOA Readiness Assessment, SOA Opportunity Assessment, SOA Proof of Concept and SOA Center of Excellence.

SOA Jumpstart Workshop is designed to bring business and technical managers together to show them what an SOA is, which services can be exposed as Web services in an SOA, and how to implement it. Forrester's Rymer, who observed a workshop, said that although it was aimed at a business audience, the workshop presented technical detail.

Readiness Assessment helps identify the current technology infrastructure that exists in an organization. Opportunity Assessment identifies the additional pieces that could be supplied, and in what time frame, to bring SOA implementation online.

Badani said Readiness Assessment, which is a service, is designed to be more comprehensive than BEA's online SOA Readiness Self-Assessment Tool, which was released in January. "It's more practical and informational than an online tutorial."

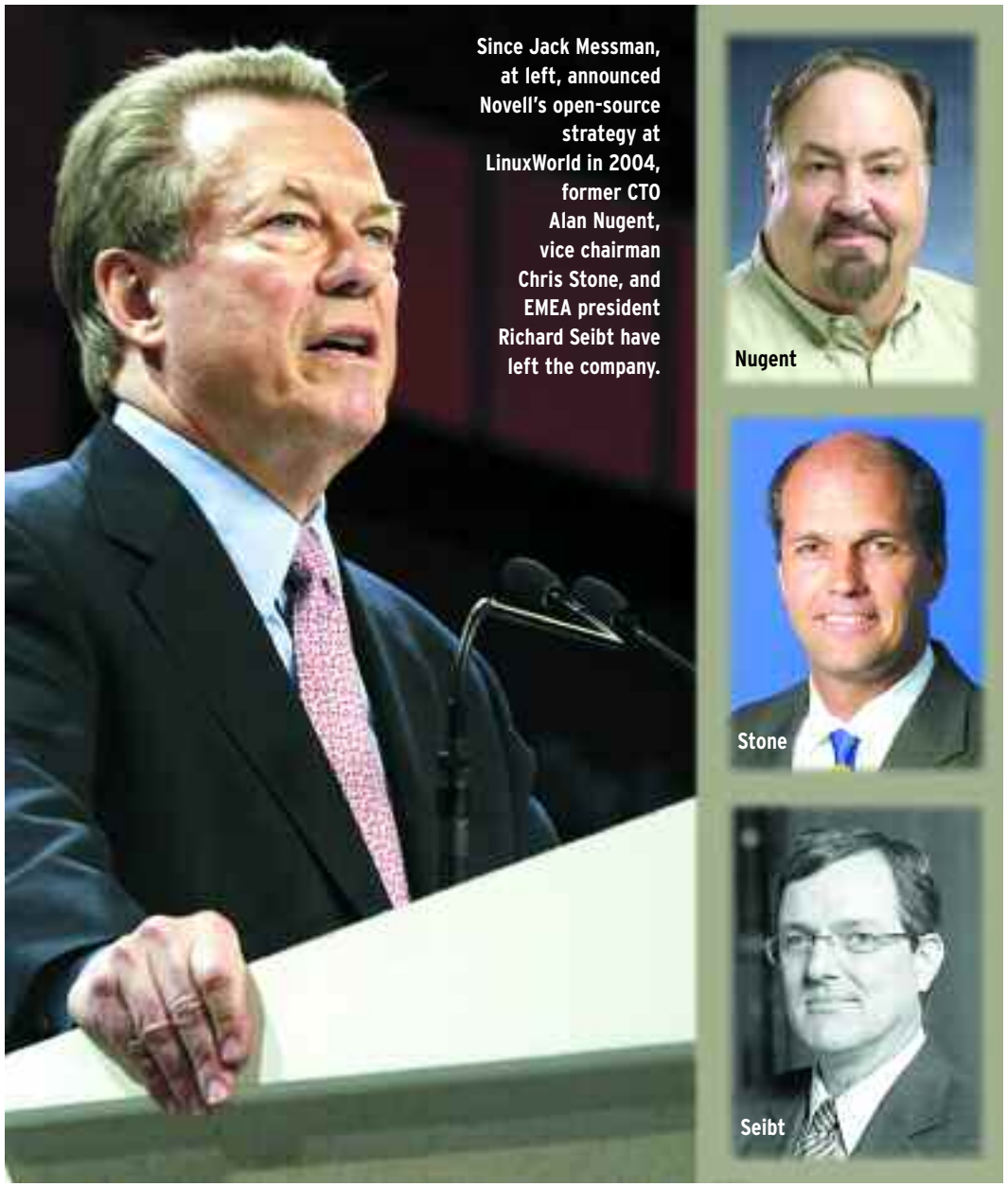
The SOA Proof of Concept identifies candidates' projects that could be reused as services and delivers what it calls a Services Candidate Architecture as a proof of concept.

IBM'S BI ADOPTION MODEL

IBM Business Integration Adoption Model involves tools, workshops and services that tie together the WebSphere, Rational and Tivoli product lines. It is designed for companies that have already adopted Web services and SOA, as well as those that are new to the architecture.

Among the first tools is a free online assessment tool similar to BEA's SOA Readiness Self-Assessment Tool. The consulting services also include workshops delivered at the client's work site.

Finally, IBM announced the SOA Integration Framework, a new services capability built on WebSphere, Rational and Tivoli middleware consisting of IBM SOA patterns, processes and tools to speed SOA delivery. The integration framework will provide prescriptive guidance for creating business processes and services, runtime environments, and the appropriate management frameworks, all targeted for SOA applications and environments. ■



Since Jack Messman, at left, announced Novell's open-source strategy at LinuxWorld in 2004, former CTO Alan Nugent, vice chairman Chris Stone, and EMEA president Richard Seibt have left the company.

Nugent

Stone

Seibt

Novell Exodus A Worrisome Sign?

BY YVONNE L. LEE

Departures of prominent executives at Novell have caused analysts to wonder about the company's future.

In May, the company lost Richard Seibt, who had been CEO of SUSE Linux before it was acquired by Novell in 2004, and then served as president of the company's Europe, Middle East and Africa operations. Other departures include CTO Alan Nugent, who in early April became the senior vice president and general manager of Computer Associates' Unicenter business unit; and former vice chairman Chris Stone, who left Novell shortly after the SUSE purchase and became president of StreamServe in early April. Seibt, Nugent and Stone all had been instrumental in moving Novell from NetWare to its current Linux-based strategy, according to analysts.

"It's very clear to most of us that Red Hat is taking the overall Linux initiative, and because Novell has effectively announced the end of NetWare with the move to Linux, executives are seeing the writing on the wall and nobody wants to be there when they turn off the lights," said Rob Enderle, principal analyst at the Enderle Group.

WHAT, ME WORRY?

Others are not so sure that the departures signal the end for Novell, but they did say that they were worried about the company's momentum and strategy.

"It's worrying, isn't it?" pondered Gary Barnett, analyst at Ovum. "From my perspective, the issue with Novell is that a couple of years ago, they seemed to have really gotten their act together." Barnett described Novell as being "in denial about Windows," but said the acquisition in 2001 of services and consulting company Cambridge Technology Partners—which brought CEO Jack Messman into Novell—and the subsequent acquisition of SUSE reinvigorated the company.

"In the last year or so, we've seen some exciting things from Novell, particularly with Mono. They fully embraced SUSE," he said. "My concern is that they're

▸ continued on page 13

Catalyst Accelerates Build Management

Adds enterprise and reporting features for managing multiple targets

BY JENNIFER DEJONG

Some developers like to tinker with manually scripted build files, but the task of managing multiple build targets across more than one location is too difficult to do by hand.

Manual scripting makes it easy for developers to break Ant or make files, said Tracy Ragan, president and co-founder of Catalyst Systems.

Aiming to avoid that problem, the Glencoe, Ill.-based firm was expected this month to add enterprise management and reporting features to its build management tool, Openmake, which automates the scripting process.

New to version 6.4 is the ability to see, in real time, every build activity that is happening, said Matt Garbo, a senior developer at Catalyst. Build activities include steps such as compiling or linking, or checking a file out of a configuration management system. The ability to look at individual build activities is key for companies that manage multiple builds simultaneously.

"You can tell the team responsible for a [particular] build that a step has failed even before the process is complete," he said. "When developers depend on manually scripted builds, they have no sense of what happens after they hit go. They sit and wait."

Openmake 6.4, which starts at US$300 per seat, also provides new reporting capabilities. Based on data stored in Openmake's knowledge base, the reports make it easier to isolate and fix problems. For instance, a developer can run a report to see what search paths look like, or which users are assigned to which groups, with which privileges, Ragan said. The previous version provided no ability to "look inside the details of meta data."

Also new is the ability to pull data into a relational database, where it can be "sliced and diced" with information obtained from other sources, she said.

BYE BYE, BIRKENSTOCKS

In the past, when applications required fewer builds, there were certain, old-style developers—they had full beards and wore Birkenstocks—who loved to write scripts, Ragan said. They simply coded Ant files, ran them, and tweaked them until they worked.

But the build management process has changed, and so have developers. "In the past, builds were forgotten, but now you have to have your builds in order," she said. Builds are part of the application development life cycle. And the newer Java and .NET developers are tired of maintaining manually scripted files, she said. ▮

Worlds of Defect Tracking, Vulnerabilities Collide

Klocwork brings both capabilities into K7, its latest static code analysis release

BY DAVID RUBINSTEIN

Saying that the line between software quality and security is blurring, Klocwork this week announced version 7 of its static code analysis tool that focuses on both defects and vulnerabilities. The tool will be generally available at the end of the month.

Klocwork's K7 "is a complete defect management solution, from bugs to vulnerabilities to violations of metrics and architecture rules," said Chris Fedorko, vice president of product management. "You have to deliver quality out of the box. The objective is to get to no patches," referring to what he called the all-too-common practice of delivering software and then following up with a string of bug fixes as defects are found.

In the area of security, K7 addresses both C/C++ and Java with feature enhancements, Fedorko said. In C/C++ code, critical issues such as access control, string manipulation, buffer overruns, warnings on use of dangerous functions and tainted data can be managed from the new tool, which sits atop a developer's code editor, he said. In Java, the focus is on Web applications. Issues such as cross-site scripting and injection flaws, vulnerabilities in provisioned applets, servlets or EJBs, and unvalidated input can be dealt with, he added.

Fedorko said the vulnerabilities stored in the Klocwork repository have been aligned with the work of the Open Web Application Security Project. K7 can be customized, letting developers create specific checkers for adherence to coding practices, for example, or set custom metric boundaries, he said. The tool integrates with Rational Application Developer for WebSphere and Eclipse, he noted.

Other improvements over past versions include the ability to trace back more types of defects. In the visual Project Central interface, users can click on a defect to see the flow of the code and gain a better understanding of what went wrong and where it occurred. The tool also features enhanced reporting capabilities, including log-in and administrative control, and improved navigation, Fedorko said.

An improved accuracy rate from the code analysis also has been gained, he said. "Users want a low false-positive rate, but they also want to cast the net as far and broad as you can."

Klocwork will sell K7 in four editions—Defect Discovery, emphasizing code quality; Security Vulnerabilities, focused on detecting holes and other flaws in the code; Defects & Security, which combines the two; and Development Edition, which adds the architectural controls, metrics analysis, reporting and customization, Fedorko said. ■

News Briefs

NEW PRODUCTS

Quadralay has introduced **WebWorks ePublisher Pro**, an XML-based content creation system for Web, intranets, online help systems, portable devices, enterprise-ready XML or PDF files. The software lets developers create help or other online documentation from Microsoft Word or Adobe FrameMaker files. The Word version costs US$1,100; the FrameMaker version is $1,395 . . . DataDirect Technologies is offering **DataDirect Connect XE for ODBC**, a set of database connectors for high-end transaction systems and for data warehouse applications using Teradata V2R4.1.3, V2R5.0.x, V2R5.1.x and V2R6.0 databases. The company has also launched an open beta of **DataDirect XQuery**, its query component for applications that need to process both XML and relational data sources. The component supports both the W3C XQuery specification and the Java Community Process JSR 225 for XQJ, or XQuery API for Java . . . A new consortium called **OpenXRI.org** is building an open-source implementation of the OASIS Extensible Resource Identifier spec. An XRI server provides an identification and naming layer for applications requiring persistent, trusted endpoints for secure messaging and privacy-protected data sharing and synchronization. The OpenXRI consortium, which includes AMD, AmSoft Systems, Cordance, Epok and NeuStar, will build its server software to provide Java APIs to translate between XRIs and standard URLs . . . Keyoti has released two new server components. **Search Lite for ASP.NET** is an index-based search engine control for Web applications. The US$250 component can be customized by templates, and deployed by moving its DLLs and index files to the server. **WeatherBox .NET**, $199, is a control that can show weather status using a free independent data feed; the component can be set to display weather for a fixed location, or let users choose their own locations . . . In the third quarter, Zend Technologies will ship **Zend Core for Oracle**, a free download that will integrate Oracle's databases and Zend's PHP runtime environment . . . Security tools maker NT Objectives has released two new freeware products. **NTOinsight** is a command-line Web site analysis tool that analyzes site content, architecture and external interdependencies. It generates XML and HTML reports that graphically communicate its findings, including possible attack points that can be targeted by hackers. **NTOweb** is a vulnerability assessment plug-in for NTOinsight that scans for the more than 3,100 known vulnerability signatures in the Nikto open-source vulnerability database maintained by CIRT.NET.

UPGRADES

QL2 Software has updated **WebQL**, its software that uses SQL queries to retrieve targeted information from unstructured data sources for competitive analysis, marketing trends and legislative compliance. Version 2.4 improves support for Web site localization, and now allows data retrieval from both POP3 and IMAP e-mail servers. It also can perform native Word document parsing and automated RSS feed navigation . . . UCanCode Software is offering version 9.1 of **E-XD++ MFC Library, Enterprise Edition**, its Windows visualization component for building flow and diagramming functionality using C++ or ActiveX. The new release makes it easier to align shapes, and adds new classes for making drawing canvasses within any type of window and for print previews. A six-developer license costs US$3,680; there are no runtime royalties . . . Microsoft has released two beta components from **Longhorn**, the next version of Windows: **Indigo**, Windows' next-generation Web services middleware, and **Avalon**, the unified presentation subsystem for Windows. They can be downloaded from msdn.microsoft.com /longhorn. Also included in the download is the first technology preview of **InfoCard**, a new Windows feature designed to make end users' digital identity experiences simpler and safer . . . Red Gate Software is offering a performance enhancement to its **ANTS** profiler for .NET applications. According to the company, ANTS 2.5 can profile data from 2 million lines of code per second. Also new to this release, the US$295 profiler can display object values in the memory profiler, show embedded fields and field

▸ continued on page 15

Stonebraker Wins IEEE's von Neumann Medal

BY YVONNE L. LEE

The Institute of Electrical and Electronics Engineers (IEEE) in May awarded database pioneer Michael Stonebraker its computer science award that recognizes a lifetime of achievements in the industry.

"I feel privileged and blessed," said Stonebraker, whose career began more than 30 years ago. "There have been [15] other people who have been given this award, all of whom are household names. I get to join very rarified company." Stonebraker, a resident of Manchester, N.H., is currently both an adjunct professor at the Massachusetts Institute of Technology and CTO of StreamBase systems, which is working on using SQL technology with streaming data.

Stonebraker started the Ingres database in 1973. Ingres and IBM's System R were the first relational databases, and all existing databases evolved from one of those two, according to Stonebraker. DB2 and Oracle sprang from System R, while Informix, Computer Associates' Ingres r3, and Sybase came from Ingres.

He also started the open-source Postgres object-relational database, which first was used to tie geographic information to a relational database. It also stretched databases from beyond business uses to scientific and engineering uses, he said.

Both the Ingres and Postgres projects began as academic work when he was a faculty member of the University of California at Berkeley collaborating with professors from other universities, he said. However, when Arizona State University attempted to automate its student records with Ingres, the Unix operating system on which it ran lacked a version of COBOL to manipulate the data, he said. That prompted him and his colleagues to start a company to support the database and to enhance it with the supporting applications, such as a report writer, which were available with commercial databases.

Michael Stonebraker received the award for a lifetime of database achievements.

"A lot of the academic prototypes I've done since then have had commercial potential and have been commercialized," he said. "It was just kind of a happy accident."

His current work at StreamBase involves applying SQL to the processing demands of high-performance real-time streaming applications, particularly those where data is collected immediately from sensors, such as RFID tags.

Stonebraker said he designated his honorarium to go to the New Hampshire Charitable Foundation. Stonebraker will formally receive the medal at the 2005 IEEE Honors Ceremony on June 18 in Chantilly, Va. ▮

VON NEUMANN WINNERS

The IEEE John von Neumann Medal was established in 1990 and is named for mathematician John von Neumann, whose work at the Institute for Advanced Study led to the building of the IAS binary stored-program computer in 1952. The IAS machine served as the model for IBM's first all-electronic stored-program computer, the 701. The past winners are:

2004	Barbara H. Liskov	2000	John L. Hennessy, David A. Patterson	1996	Carver A. Mead
2003	Alfred V. Aho	1999	Douglas C. Engelbart	1995	Donald E. Knuth
2002	Ole-Johan Dahl, Kristen Nygaard	1998	Ivan Edward Sutherland	1994	John Cocke
2001	Butler W. Lampson	1997	Maurice V. Wilkes	1993	Frederick P. Brooks Jr.
				1992	C. Gordon Bell

Source: Institute of Electrical and Electronics Engineers

New Outlook for Visual Studio Tools for Office

BY JENNIFER DEJONG

Microsoft was expected to announce at its Tech-Ed conference in Orlando, Fla., on June 5 that it plans to add Outlook support to Visual Studio 2005 Tools for Microsoft Office System (VSTO).

The move will enable developers to create in Visual Studio applications that let Outlook users access and manage not just e-mail, appointments and contacts, but also key business data, such as customer records.

BJ Holtgrewe, senior product manager for VSTO, said everybody is looking to add smart-client interfaces to applications such as customer relationship management (CRM) systems. It makes sense to "take the one that already exists," referring to the e-mail, calendar and contact management application that is part of Microsoft Office.

The business user could get at customer account data, for example, simply by clicking a button in Outlook, Holtgrewe said. "You could make sure that your business contacts in Outlook are synced up with those in your CRM app."

Up until now, extending Outlook, which is based on Microsoft's earlier software architecture, the Component Object Model (COM), was difficult, he said. Because .NET supports XML and Web services, VSTO makes it easy to link Outlook to virtually any data source. For instance, by extending Outlook, a staffing company could automatically download resumes attached to e-mail messages into a document repository, which would also be searched from within Outlook, Holtgrewe said.

Microsoft released in April beta 2 of VSTO 2005, which includes support for Excel, Infopath and Word. ▮

Seapine Software™
changing the world of software development

Developers love creating code... Managers crave process control... Bridge the gap with Seapine CM.

Software development is a team effort with developers, testers, and management all working toward one goal – delivering the highest quality product on time.

Built on award-winning TestTrack Pro and Surround SCM, Seapine CM brings structure to source control and issue management, improving communication while accelerating product development.

Seapine CM helps your team...

Define custom change request workflows, putting you in control of who makes changes and who authorizes the closure of issues.

Associate source code changes with defects or change requests.

Gain a thorough understanding of how much work remains before project completion.

View complete audit trails of what changed, why, and by whom.

Understand how close you are to release – how many issues are open, how quickly are you closing them, how many are re-opened?

Successful team-based development requires the proper process supported by the right development tools. Tools that are flexible, easy to use, secure, and scalable–like Seapine CM.

Features:

Complete source code control with private workspaces, automatic merging, role-based security and more.

Comprehensive defect management – track change requests, bug reports, feature requests and more.

Fast and secure remote access to your source files and defects – work from anywhere.

IDE integration with JBuilder, Visual Studio, Eclipse, and other leading development tools.

Advanced branching, triggers, email notifications, fully configurable workflows, and customizable fields put you in complete control of your process.

Open interfaces – triggers, email notifications, SOAP support, XML data exchange, and ODBC clients.

Scalable and reliable cross-platform, client/server solution supports Windows, Linux,

Achieve major improvements in software development performance through better tool integration and process automation. Manage defects, development issues, and change requests with award-winning TestTrack Pro and gain complete control over your source code and change process with Surround SCM. Seapine's integrated change management tools are feature rich, highly scalable, Web enabled, and cross platform. Streamline your development process with Seapine CM and help your team deliver quality software products on time, every time.

Learn more about the Seapine CM suite at
www.seapine.com
or call 1-888-683-6456

Surround SCM Source Control
TestTrack Pro Defect Management
QA Wizard Automated Testing

© 2004 Seapine Software, Inc. All rights reserved. Surround SCM, TestTrack Pro, and QA Wizard are either registered trademarks or trademarks of Seapine Software, Inc.

JBuilder: Based on Eclipse by 2006

BY JENNIFER DEJONG

Borland Software charted a course for JBuilder last month, offering a glimpse of the next two releases of its popular Java IDE.

Central to JBuilder 2006, expected later this year, is "a notion of shared views, shared editing [and] shared debugging," enabling more effective collaboration among teams of developers, said Rob Cheng, Borland's director of product marketing.

But a bigger change is in store for next year, when Borland plans to release a rearchitected version of JBuilder that uses Eclipse as its underlying integration framework. That will allow JBuilder to leverage Eclipse's Rich Client Platform, essentially "a set of APIs that lets you take advantage of the operating system's ability to draw nice user interface elements," Cheng said.

Code-named Peloton, the Eclipse-based offering also will let JBuilder developers make use of the increasing array of plug-ins available for the open-source framework. Also expected in Peloton are impact analysis capabilities that let teams of developers more easily see, for example, "how a change applied to one method affects five apps somewhere else," said Cheng. But the updated offering will still feel familiar to JBuilder users. "It's still JBuilder," he said.

Borland plans to deliver Peloton the first half of 2006, while JBuilder 2006, which will replace the current JBuilder 2005, is expected this year.

The collaboration features promised in JBuilder 2006 give teams of developers a more intuitive way to convey what's happening in their code. One developer can look at another developer's debug trail in real time, actually seeing where it breaks, Cheng said. Developers typically try to explain such things in e-mail, but that "often confuses matters," he said.

Cheng emphasized that Borland will continue to sell and support JBuilder as a separate product, even as it promotes Core SDP, the role-based, lifecycle offering that the company delivered in March. ▮

.NET Component Suite Gets Update

BY JENNIFER DEJONG

ComponentOne has updated its arsenal of .NET components.

The Pittsburgh-based company released Studio Enterprise 2005 2.0 last month, adding a new component that makes it easy for developers to add standard barcode types to reports, grid cells, Web pages and standard .NET PrintDocument objects, said managing director Gustavo Eydelsteyn.

In addition to Barcode for .NET, the company has added more than 60 updates to the .NET WinForms and ASP.NET WebForms components included in the Studio Enterprise 2.0 release, which is sold on a subscription basis at US$999 per developer. For example, Report for .NET provides better picture scaling and compression, and Chart for .NET lets developers create new colors by "mixing" two existing colors, Eydelsteyn said. ▮

LogicLibrary Takes on Governance, Asset Sharing

BY YVONNE L. LEE

LogicLibrary has updated its Logidex repository with two features designed to make it easier to use with Web services that are reused throughout an organization.

The new capabilities in Logidex 3.6 involve governance and sharing assets across libraries.

Logidex CTO Brent Carlson differentiated Web services governance features found in Logidex from those designed to monitor the security and ensure the smooth running of deployed Web services. His company's governance is designed to help organizations comply with internal rules and with legislation, as well as to ensure that the service does what it is intended to do, he said.

The governance capability, called Smart Controls, makes it possible to oversee the process of building and approving a Web service, said Carlson.

The other feature, the Federated Repository, enables organizations to automatically share selected assets across interconnected libraries. This ability to distribute assets could make it easier to create smaller, generic services that are reused in applications throughout the enterprise, said Carlson.

Other additions to the software, which costs US$25,000 per server plus an additional variable per-user charge, include integration with Borland's JBuilder IDE and Mozilla's Firefox Web browser. The product continues its existing support for Eclipse, IBM's Rational Software Architect, and SAP's NetWeaver IDEs, as well as for Microsoft's Internet Explorer. ▮

DoorKeeper Bridges Two Best-of-Breed Tools

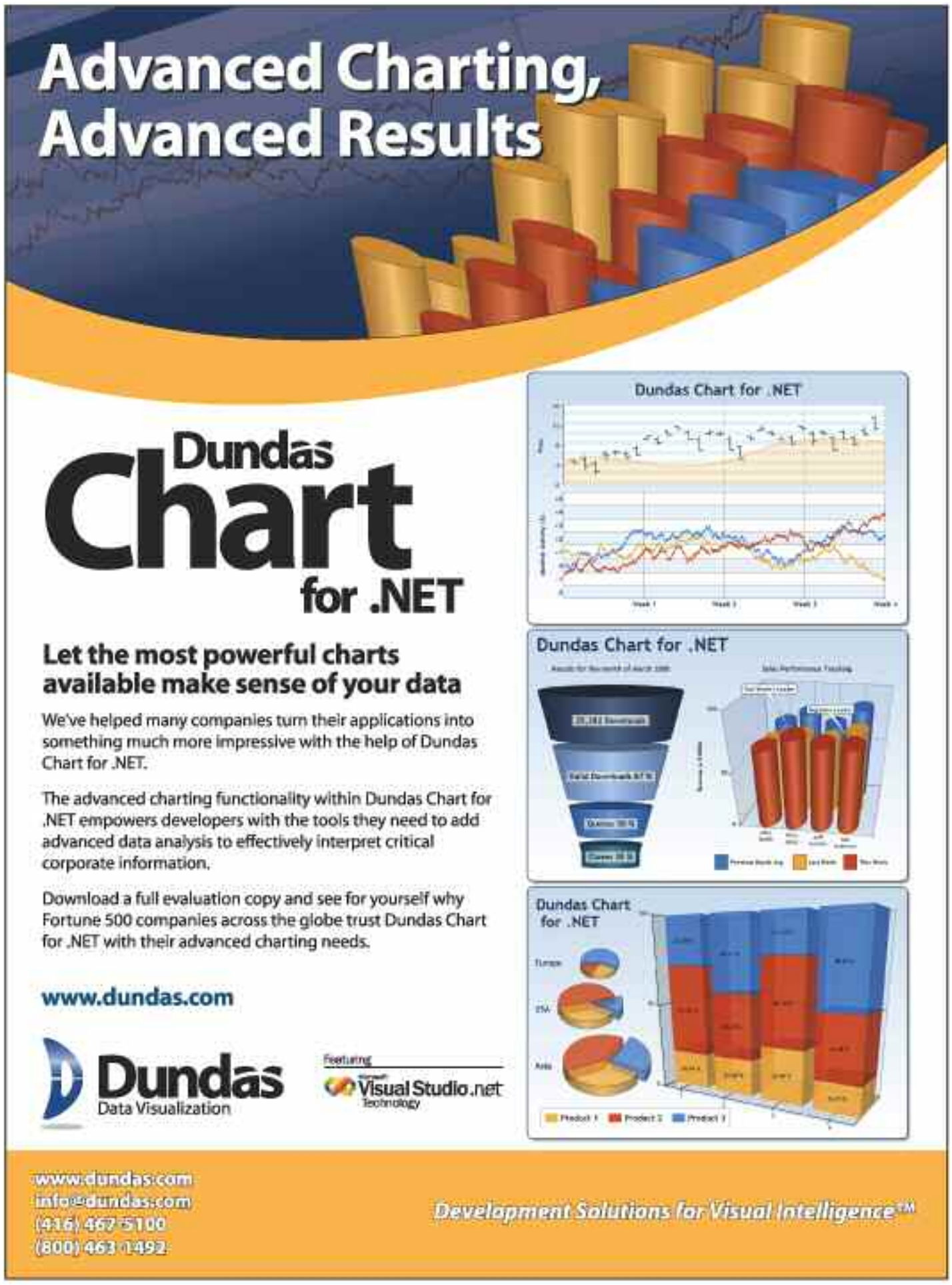
BY JENNIFER DEJONG

Suite makers tout the merits of a single vendor approach, but many teams still opt for best-of-breed tools.

To that end, EmbeddedPlus was expected late last month to ship DoorKeeper for the IBM Rational Software Development Platform (RSDP), aimed at teams that use Rational modeling tools with Telelogic's requirements software, DOORS. "Rational Rose is the de facto standard for modeling, and Telelogic DOORS is the de facto standard for requirements," said Cory Bialowas, director of product development for the Tempe, Ariz.-based firm.

DoorKeeper plugs into RSDP, allowing team members to see at a glance how models created in Rational Rose XDE Developer (part of RSDP) relate to requirements documented in DOORS. In the past, teams that relied on DOORs and Rational Rose had to write their own integrations.

Vendors typically do a good job of providing integration among their own products, he said. "But integrations to competitors' tools are generally poor." DoorKeeper, for which pricing has not yet been determined, makes it as easy to use DOORS within RSDP as it is to use RequisitePro, IBM Rational's own requirements management tool, he claimed. ▮



Sabbah Takes Helm at IBM Rational

BY JENNIFER DEJONG

Mike Devlin, who co-founded Rational Software before it was acquired by IBM in 2003, has retired. Danny Sabbah, a 30-year veteran of IBM and a key backer of the company's open-source plans, replaces Devlin as general manager of the Rational business unit.

The announcement was made in late May at the IBM Rational Software Development Conference in Las Vegas, where Devlin and Sabbah jointly delivered the keynote address, said Eric Naiburg, market manager of desktop products for IBM Rational.

The company also announced two toolkits that foster collaboration among developers, testers and systems administrators, who maintain and operate the applications. Problem Resolution Toolkit for Rational Application Developer identifies trouble spots that crop up while an application is deployed, pinpointing for the developer where in the code the problem has occurred. Performance Optimization Toolkit for Rational Performance does the same thing, but it is focused on the preproduction stage, where testers and coders must collaborate, Naiburg said.

Both toolkits are designed to extend the IBM Rational Application Development Platform, the company's role-based, lifecycle offering, which integrates Rational, WebSphere and Tivoli tools under Eclipse 3.0.

Sabbah, who is 53, is "one of the founding fathers of Eclipse," Naiburg said. As head of IBM's WebSphere tools, he drove the company's adoption of the open-source framework, on which its application development platform is based. Devlin, who is 50, stepped down on May 26. "He spent 23 years building Rational Software, and he has decided to take a break," Naiburg said. "He is going off fishing."

IBM also announced at the conference updates to IBM Rational Performance Tester, including HTML rendering capabilities that enable QA professionals to view the Web pages they are testing, instead of just looking at the code, Naiburg said.

In other IBM news, the company announced May 20 the Business Integration Adoption Model, a resource for building service-oriented architectures. ■

Danny Sabbah replaces Mike Devlin, who founded Rational.

BuildForge Goes FullThrottle on Process

BY DAVID RUBINSTEIN

With a new name and a new tool, BuildForge is seeking to broaden its base from build and release automation to include software delivery process management.

FullControl, the successor to BuildForge 3.5, is a process engine and integration framework that connects different areas in a software production process, such as development, testing and deployment.

FullThrottle is a new tool that helps users determine which aspects of their process can run concurrently and to allocate tasks to hardware resources for maximum efficiency, explained Cheri Bergeron, director of marketing.

What makes the products different, she claimed, is that they allow users to continue to work with their current processes and tools, such as those from IBM Rational, Mercury or Serena.

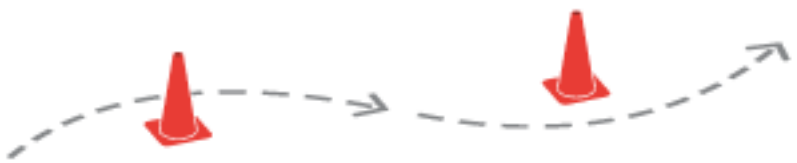
"It's an overlay that takes turf wars off the table," she said, indicating that automation, auditability and standardization can occur while teams continue to use their preferred tools and existing process management systems.

FullControl, the company's next-generation build management system, requires the BuildForge Management Console, a stand-alone product that includes an Apache Web server, the BuildForge engine and a MySQL database, Bergeron said, noting that ODBC provides access to other databases. The console and server "agents" that monitor the builds and processes for breakdowns are available for Linux, Unix and Windows, and the integration API has libraries for C, Java and Perl, she said.

FullControl is normally used by configuration management experts or software architects to lay out the production process. The software then is used to create a live prototype of the unified process to get the development and QA teams to sign off on the plan, Bergeron explained. ■

Adopting Agile Development?
Steer Clear of the Roadblocks:

- Poor visibility slows your response to fast-changing customer needs
- Can't easily synchronize the day-to-day efforts of your distributed team
- Costly IT headaches with multiple systems tracking requests, requirements, tests, defects & tasks



Roll out Agile with Rally™
Software Development Management On Demand

Effective Agile project management combines high communication with low bureaucracy so your entire organization can embrace change and speed delivery of customer value.

Join us at: AGILE2005 Conference
www.agile2005.org

RALLY software development
deliver early, deliver often
www.rallydev.com/sdt

What's your PDF?

Precise Document Formatting
With activePDF Server™, you gain full control over your PDF output with conversion options that allow you to specify page size, compression and resolution options, embed text, create bookmarks, concatenate to existing files, and more. Licensed per server, you can easily add PDF generation to virtually any Windows application.

Populate Dynamic Forms
With activePDF Toolkit™'s form-filling capabilities, you can dynamically populate PDF forms with data and images from a database, allow users using only Adobe Reader to fill-in and save forms and use PDF forms as document templates to precisely control image placement and resizing. With Toolkit's robust API, the automation of virtually any PDF manipulation task becomes possible - append, stamp, stitch, merge, paint, secure PDF and more.

Promote Digital Fidelity
Do you need to standardize PDF output within your enterprise? With DocConverter™, you can easily use built-in support for "watched" folders to implement server-side PDF generation in a matter of minutes, with full control over the PDF output at the server level. Or, use DocConverter's programmable COM object to integrate convert-to-PDF functionality within your enterprise application.

Present Data Fashionably
Ensuring precise layout of an HTML document can be a nightmare, especially when printing. PDF guarantees pixel-perfect layout every time as what you see is what you print. With activePDF WebGrabber™, you can dynamically convert any URL, HTML stream, or HTML file to PDF on the fly, while maintaining embedded styles.

Download your free trial version today at www.activePDF.com

Copyright © 2004, activePDF, Inc. All Rights Reserved. "ACTIVEPDF", "Leading the Paper Revolution" and the activePDF logo are registered trademarks of activePDF, Inc. All activePDF product names are trademarks of activePDF, Inc.

activePDF Leading the Paper Revolution

Exodus From Novell Worries Observers

◂ continued from page 5

in danger of losing some of the momentum they picked up."

"It's of concern to see these executive departures," said George Weiss, a Gartner analyst. "I can't mention whether it's a personality conflict at the highest level. There could be disagreements. As far as my perspective from the Linux view, I had hoped to see them making faster advancements." Novell is a Gartner client, Weiss said.

Both Weiss and Enderle said Novell is losing NetWare customers at a faster rate than it is gaining Linux customers, a belief borne out by the company's latest financial figures. For the fiscal second quarter ended April 30, Novell's revenue from new licenses was US$45.8 million, compared with $60.3 million for the corresponding quarter a year earlier. The company brought in $297.1 million for Q205, up slightly from $293.6 million for the comparable quarter in 2004. In both quarters, it lost 4 cents per share.

"Right now, it appears that if there's going to be a [single] commercial Linux, Red Hat has the momentum," said Enderle.

ONLY A FLESH WOUND?

While Enderle said he believes the financial figures spell inevitable doom, Ovum's Barnett said the defections and pedestrian revenues are "missteps" that can be righted.

"Novell has always had an issue with marketing and branding," he said. "The nice way you can say this is Novell's technology has always been better than its marketing."

Novell needs to tout more vociferously the work it has been doing with open source, and it needs to show that it is a leader in the data center, he said.

Still, he added the situation is not as bad as it could be.

"I don't think there are any red flashing lights or claxons sounding," he said. "I would characterize these as a misstep rather than a falling on your face, which is what happened at BEA [last year]."

The departures at the top could actually be a good thing for Novell, according to Clay Ryder, president of the Sageza Group.

"Novell is working hard at getting relevant again," he said. "At the end of the day, there needs to be some change at the corporate level."

Ryder compared it to a store that had an outdated inventory and design. "Until you see the 'under new management' sign, you're probably not going to shop there," he said. "Sometimes, you need to put the new veneer on things."

Ryder pointed out that the job market has loosened up, and that extends to the upper levels.

However, Gartner's Weiss said the fact that the executives left means that Novell's appeal was not strong enough.

"Bonds between them and Novell must not have been strong, meaning they must not have been enough to keep them," he said. "Novell has to turn that around. They lost a CTO, a vice chairman and so on. You don't want to lose too many of those kinds of people before you start inviting speculation [about] what is going on inside." ■

Programmer's Paradise®
Your best source for software development tools!

GUARANTEED BEST PRICES*
*Terms of the offer:
• Offer good through June 30, 2005.
• Applicable to pricing on current versions of software listed.
• Does not apply to previous orders.
• Offer does not apply towards competitors' ads.
• Subject to change without notice.

LEADTOOLS
Raster Imaging Pro for .NET
by LEAD Technologies
Extend and simplify the .NET framework and C#+ with LEADTOOLS. Support for over 140+ file formats including TIFF, JPG, J2K*, PDF*, and GIF using various compression schemes like JPEG, JPEG2000, J2K, CCITT G3/G4, and CMP. Scan, capture, 200+ image processing filters, high speed display (resize, rotate, quality controls), and much more. Lots of sample source code to get you started quickly!
Paradise # LOS 053F
$829.99
www.programmersparadise.com/lead

dtSearch Web with Spider
Quickly publish a large amount of data to a Web site with "blazing speeds" (OCV, Inc. Group) searching.
• Features over a dozen indexed and fielded data search options.
• Highlights hits in XML, HTML and PDF, while displaying links and images; converts other files ("Office," ZIP, etc.) to HTML with highlighted hits.
• Spider adds a third-party site to index's own searchable database.
• Optional API supports SQL, C++, Java, and all .NET languages.
Download dtSearch Desktop with Spider for immediate evaluation
"The most powerful document search tool on the market"—Wired Magazine
Single Server Paradise # D29 0726
$888.99
www.programmersparadise.com/dtsearch

Paradise Picks

DevTrack 5.6
Powerful Defect and Project Tracking
by TechExcel
DevTrack, the market-leading defect and project tracking solution, comprehensively manages and automates your software development processes. DevTrack 5.6 features sophisticated workflow and process automation, seamless source code control integration with VSS, Perforce and ClearCase, robust searching, and built-in reports and analysis. Intuitive administration and integration reduces the cost of deployment and maintenance.
programmersparadise.com/techexcel
Paradise # T34 0201
$482.99

c-tree Plus®
by FairCom
With unparalleled performance and sophistication, c-tree Plus gives developers absolute control over their data management needs. Commercial developers use c-tree Plus for a wide variety of embedded, vertical market, and enterprise-wide database applications. Use any one or a combination of our flexible APIs including low-level and ISAM C APIs, simplified C and C++ database APIs, SQL, ODBC, or JDBC. c-tree Plus can be used to develop single-user and multi-user non-server applications or client-side application for FairCom's robust database server—the c-treeSQL™ Server. Windows to Mac to Unix all in one package.
64-bit SQL Available!
Paradise # F01 0131
$850.99
www.programmersparadise.com/faircom

TX Text Control 11.0
Word Processing Components
NEW!
TX Text Control is royalty-free, robust and powerful word processing software in reusable component form.
• .NET WinForms control for VB.NET and C#
• ActiveX for VB6, Delphi, VBScript/HTML, ASP
• File formats RTF, DOC, HTML, XML
• PDF export without additional 3rd party tools or printer drivers
• Nested tables, headers & footers, hyperlinks, bullets, numbered lists, multiple undo/redo
• Ready-to-use toolbars and dialog boxes
Professional Edition Paradise # T79 021V
$739.99
Download & Save Today!
www.programmersparadise.com/theimagingsource

ComponentOne
Studio Enterprise 2005
by ComponentOne
Studio Enterprise 2005 is a truly comprehensive and integrated framework for developing cutting-edge, enterprise-style .NET, ASP.NET, Mobile, and ActiveX applications. Developers receive over 130 best-of-breed grid, reporting, charting, data, user interface, and edit/source components, top-notch support, and unparalleled power and flexibility. This solution delivers more than what you've come to expect from a component vendor.
Paradise # C18 045N
$805.99
www.programmersparadise.com/componentone

Multi-Edit 9.10
by Multi Edit Software Inc.
Multi-Edit 9.10 provides a single environment to control all your VCS programs and compilers, while integrating with existing RAD environments. Easily handle large DOS/Windows, UNIX, binary, and Macintosh files in over fifty programming languages immediately out of the box. Fully customizable, Multi-Edit's sophisticated search/replace feature now includes support for Perl 5 Regular Expressions. The Evolve Xtreme Addon and PolyStyle code formatter are integrated into every purchased copy of Multi-Edit, absolutely free! Seamlessly integrate with TopStyle, CSE Validator, HTML Tidy, Beyond Compare and other favorite accessories.
New Version! 9.10
Paradise # A30 015T
$198.99
www.programmersparadise.com/multiedit

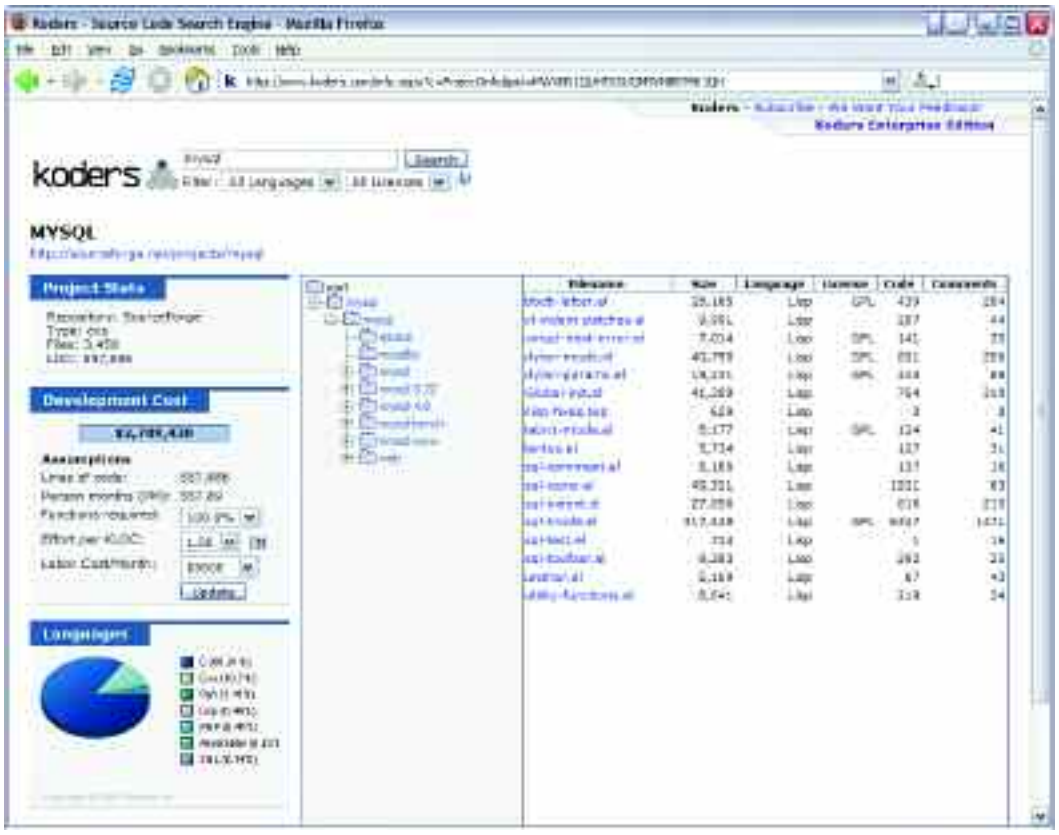
/n software Red Carpet Subscriptions
by /n software
/n software Red Carpet™ Subscriptions give you everything in one package: communications components for every major Internet protocol, SSL and SSH security, S/MIME encryption, Digital Certificates, Credit Card Processing, ZIP compression, Instant Messaging, and even e-business (EDI) transactions. .NET, Java, COM, C++, Delphi, every-thing is included, together with per developer licensing, free quarterly update CDs and free upgrades during the subscription term.
programmersparadise.com/nsoftware
Paradise # D77 0148
$1444.99

AllFusion® ERwin® Data Modeler 4.1.4 Plus 1 Year Enterprise Maintenance
by Computer Associates
AllFusion® ERwin® Data Modeler enables you to visualize complex data structures, inventory information assets and establish enterprise-wide standards for managing data. It intelligently automates the design process and synchronizes the model with the database design. You can use this product to design transactional systems, data marts and data warehouses in one integrated environment.
Paradise # P26 010H
$3791.99
www.programmersparadise.com/ca

Active VirusScan SMB Edition 26-50 Seats
by McAfee
Designed specifically for small- to medium-sized businesses (SMBs), McAfee® Active VirusScan® SMB Edition is a reliable, easy-to-manage solution combining superior technology and a user-friendly, all-in-one management tool. McAfee ProactivePak™ Active VirusScan SMB protects the essentials of every SMB—desktops and file servers—with proactive coverage that automatically updates and deploys itself, keeping your systems current and protected without any manual intervention.
* Price per unit.
Paradise # M15 0521
$18.99*
www.programmersparadise.com/mcafee

800-445-7899 • programmersparadise.com
Prices subject to change. Not responsible for typographical errors.

Koders Repository: Like Google for Code



A Koders Enterprise Edition, planned for the fall, will add homegrown code to search results.

◂ continued from page 1

make it easy to purvey the entire open-source landscape," said Jorn Teutloff, co-founder and vice president of the Santa Monica, Calif.-based company founded in 2003. "Projects are distributed across thousands of repositories and not easily searchable. So finding code to reuse in your own application is our No. 1 value proposition."

Searches can be performed using any term, including command, function, feature or ordinary words; results can be narrowed by language or license type. Results are displayed in Google-like lists showing the first few lines of code, the language, project and license. A link brings up the full source code and displays the project's hierarchy.

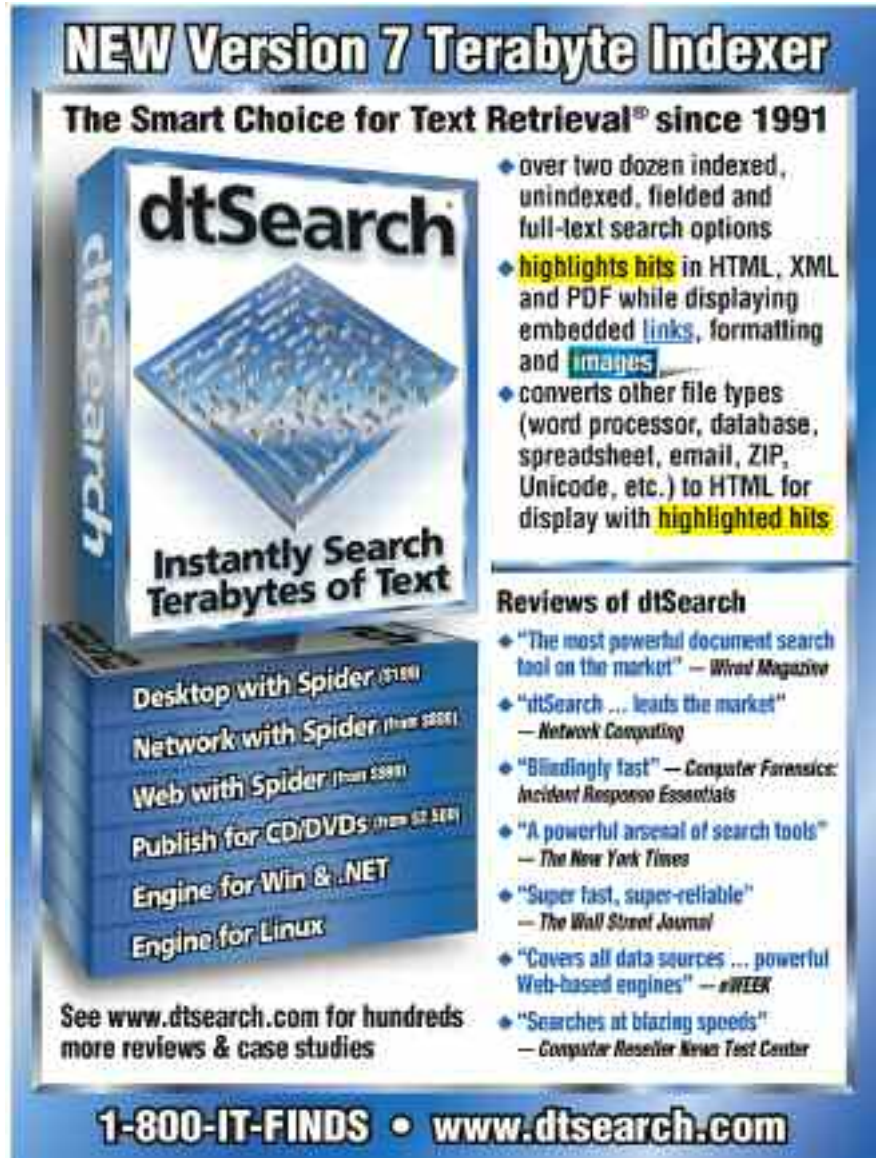
As for code quality, Teutloff said the site evaluates a number of factors related to user activity, and assigns values to code. "We track what they search for, what they download and what they are reusing. Through time, the better projects bubble up to the top. Our ranking mechanism presents the most pertinent results first."

And while downloads alone don't necessarily equate to usefulness, Darren Rush, the company's co-founder and chief architect, said the statistic becomes more telling over time. "In the context of hundreds or thousands of results, we start to see a trend that [one specific piece of code] might be a strong solution to a particular problem."

The company has been beta testing the site since October.

According to Rush, the site, which was initially populated mostly by manual methods, is now maintained automatically. "Part of our core technology is Kodebot, a crawler that connects to version-control systems and imports project lists and gets updates when they occur," he said.

Koders plans to release a paid Enterprise Edition this fall, which will permit companies to include their own code repositories in the searches. Pricing for this service was not disclosed. "This will allow for indexing of any kind of source code and combine it with the open-source search," Teutloff said. ▮



MyEclipse 4.0 Adds UML, JSF Modeling

BY EDWARD J. CORREIA

Genuitec has added UML modeling capabilities to the latest version of MyEclipse Enterprise Workbench, its Eclipse plug-in for J2EE development.

The 4.0 M1 release, which came out last week, also delivers six UML diagrams, including use-case, class and state; sequence and component diagrams are set for release later this year.

Also available now is JSF Developer, an outline view editor and designer that Genuitec president Maher Masri said is similar to the company's existing Struts modeler. "This allows you to create a model for JSF-based applications." The environment provides a graphical navigation flow designer, XML source editor, multiple views and wizards, and reportedly supports Sun's JSF reference implementation 1.1.01 and MyFaces 1.0.9. Drag-and-drop capability for classes will be added in version 5, set for the third quarter, Masri said.

The release also adds a forms-based configuration editor and wizard for the Hibernate object-relational persistence engine, and aligns with Tapestry, the Apache Jakarta subproject for Web application development, through configuration and template editors and by adding capabilities and dependencies to any MyEclipse Web project. Also new is an enhanced Oracle connector, which Masri said enables developers to view and edit Oracle functions, triggers and stored procedures. "This allows for comprehensive Oracle database management," he said.

MyEclipse Enterprise Workbench runs on Linux and Windows with the Eclipse 3.0.2 SDK. Subscription pricing increases from US$29.95 per year for most editions to $49.95 per year for editions with UML or the Oracle connector, and for the final JSF modeling edition due later this year.

Masri said that with the release of version 5, JSF Developer will be renamed JSF Designer, and "will include a Dreamweaver-like split screen for code and WYSIWYG display. Code will remain in sync with the design," and conversely, changes made in the code will be reflected in the design.

The price increase was something his company had planned to do eventually anyway, Masri said. "The plan all along was to go to $49.95. And we [also] thought of selling the UML as a separate product when we saw that competitive tools cost between $600 and $1,200." The same thought applied to the JSF and Oracle tools, he said, but that led to too much fragmentation of the product line. ■

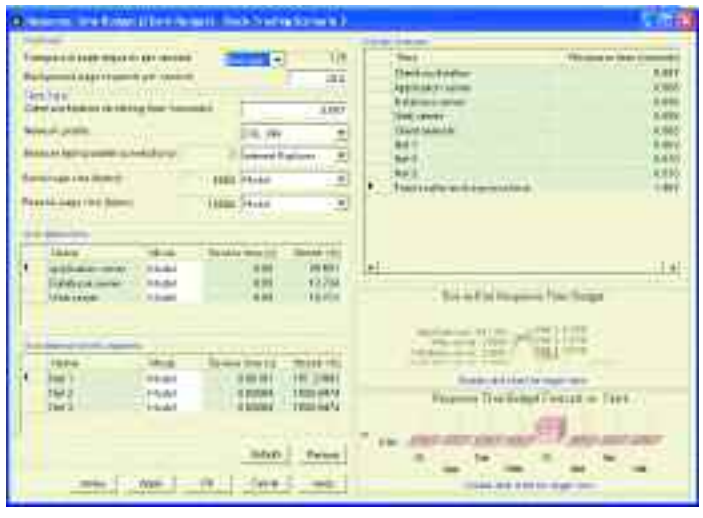
Performance Built in at Design Time

BY DAVID RUBINSTEIN

With the belief that application performance is a design-time consideration, Austin, Texas-based Hyperformix last month released an addition to its IPS product family for defining resource and workload characteristics before application development begins.

IPS Performance Designer lets users ask questions regarding resource utilization and end-user response time and identify hardware needs at each tier of the architecture to ensure the application runs optimally, according to Terry Flaherty, Hyperformix's vice president of marketing. "You can set a limit of 10,000 users for an application to be deployed into a three-tier architecture, and then layer in the specific hardware," he explained.

The designer enables companies to set goals for response time and performance, to determine how an application will be impacted by resource allocation at an early time in the development phase, and to verify that service levels can be met, Flaherty added. "There's a lot more pressure being put on service-level management," he said. "Performance had been in the operations area. Many companies now are thinking of it all the way back to development, communicating performance requirements down to developers, setting up benchmarks they have to hit."



Response-time parameters can be set before an application is written.

The other products in the IPS family are Performance Optimizer, a test modeling environment that integrates with Mercury's LoadRunner to determine if the infrastructure for deployment meets the performance needs; Capacity Manager, targeted at post-production with response-time forecasting capability; and Performance Data Manager, a repository for performance data from multiple sources. Performance Designer sells for US$35,000 per named user. ■

News Briefs

MORE UPGRADES

◂ continued from page 8

names along with their values, profile the interoperability layer between managed and unmanaged Windows code, and profile generics, anonymous methods and precompiled iterators . . . FSMLabs is shipping **Carrier Grade RTLinuxPro 2.2**, a Linux implementation and development environment compliant with ODSL Carrier Grade Linux 2.0.2 and the Linux 2.6 kernel. The 32-bit distribution has hard real-time response for interrupt code and user application threads, symmetric multiprocessing support for multiprocessor and multicore systems, memory-protected real-time application threads, and zero-copy real-time networking. A 64-bit version will be out later this year . . . Bare Bones Software has released version 8.2 of **BBEdit**, its HTML editor for Mac OS X. The new release works with Apple's Mac OS X 10.4 release, specifically its Automator visual scripting system . . . Version 3.0 of **GPS**, an Ada development environment from AdaCore, adds automatic documentation generation from Ada sources, as well as remote debugging/compilation. The update also supports interprocess communication between GPS and external tools, and adds a new visual source code comparison view, visualization of Ada metrics and improved project editing, including support for library projects . . . Accusoft has announced a 64-bit version of its **ImageGear** developer toolkit for Linux, Unix and Windows. ImageGear 14.5, which costs US$3,995 per seat, works with both the Itanium 2 and 64-bit *x*86 architectures. The company also is working on new components for data visualization and image processing . . . StarPrint Limited has released **VS.NETcodePrint Developer Suite**, an add-in for VS.NET 2003. The US$89 utility prints the source code of Windows Application, Windows Class Library, Windows Control Library, Smart Device Application, ASP.NET projects, and allows exporting to RTF, HTML and PDF files . . . Franson Technology has updated **GpsTools**, its set of components for building GPS, mapping and basic GIS applications in Visual Studio. Version 2.2 supports vector maps, and lets developers draw polygons and polylines. It also can read and write ESRI Shapefiles . . . Ittia has released **db.* 2.0**, an update to its embedded database for mobile applications. The new version supports XML export, and has better test suites and allows cross-platform builds using GNU's cross-compile tools . . . Version 1.5 of **DevTest**, a test management system from TechExcel, offers new and enhanced tools to help QA teams streamline test processes, and to better measure and track the performance of their QA engineers. It also manages other companies' test automation applications. In addition, version 1.5 introduces a stopwatch-timing feature for measuring the performance of test teams . . . Microsoft has released **Speech Server 2004 R2**; this update supports U.S. Spanish and French Canadian languages, and introduces the MSS 2004 R2, an all-in-one server deployment option. This option is designed to lower costs for voice deployments servicing between 24 and 48 ports, and touch-tone solutions supporting up to 96 ports . . . Softel has updated its tab control for Windows. **SftTabs/ATL 5.0**, designed to work with Visual Basic 6.0 applications, introduces six new tab styles, gradient fill backgrounds, and new built-in MDI-style Close, Minimize and Restore buttons, including tool tips and new button styles. The US$350 control also has simplified deployment using registration-free activation on Windows XP.

PEOPLE

SHIVELY

CORREIA

BZ Media has promoted **Charles P. Shively** to associate publisher of SD Times. Shively, who joined the newspaper last year as Northeast regional sales manager, has previously served in executive positions on Microsoft Systems Journal, Dr. Dobb's Journal, Application Development Trends and Computer Graphics World. **Edward J. Correia** has been named editor of the SD Times News on Monday/Thursday and EclipseSource newsletters. Correia also will continue as senior editor of SD Times. ■

Alternatives to WSDL Proposed

◂ continued from page 1

effect,' where you can look at a page and say that looks cool and figure out how they did it. Some of us think that low barrier to entry is very important. Some of us think simplicity is as important as generality."

NOT THE ONLY ONES

As a result, the two have separately come up with alternatives, which are posted on their Weblogs. Bray pointed out that they are not the only attempts at replacing WSDL. Jim Webber and Savas Parastatidis issued the SOAP Service Description Language (SSDL) specification in February. The work on SSDL aims to investigate the advantages and disadvantages of Web service description when SOAP is assumed from the outset compared with the transfer-independent approach of WSDL. However, SSDL is actually five separate specifications and five separate frameworks, and Bray said such a specification would be too complex to simplify Web service description.

Bray's Simple Message Exchange Descriptor (SMEX-D) is designed to provide descriptions of a wide range of REST-based and SOAP-based Web service message exchanges. Rest stands for Representational State Transfer and refers to a set of principles for managing information over a computer network, such as the Web. While RPC-based approaches focus on the actions of a Web service, REST focuses on the resources.

According to Bray, SMEX-D is designed to describe a Web service "the simplest way that could possibly work." It describes the service using an exchange of requests and responses between client and server.

He said compatibility with existing services would not be a problem. "I believe the vast majority of Web services that are in use could work with this," he said. "The advanced capabilities of WSDL aren't used very often."

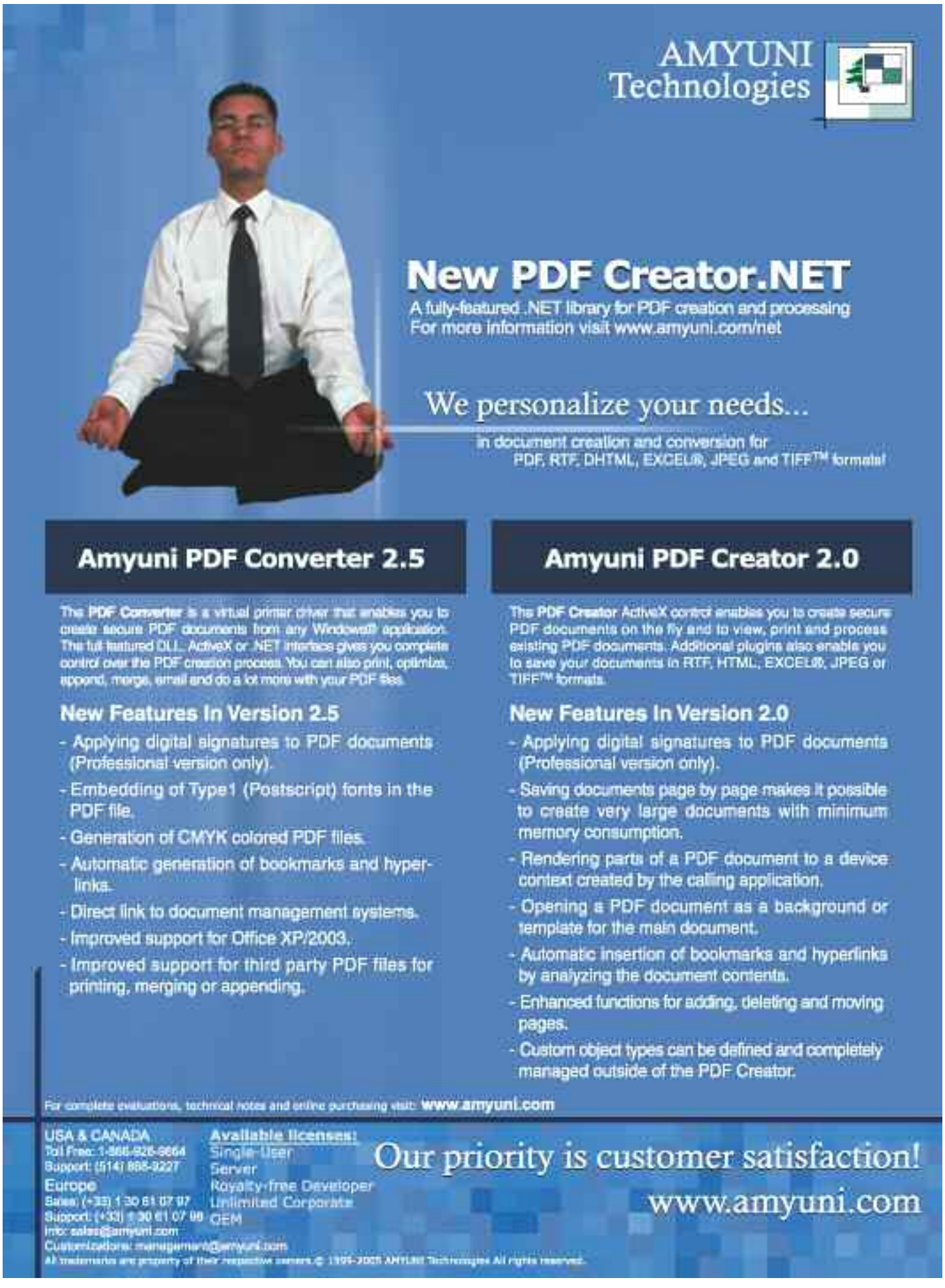
While Bray's SMEX-D focuses on the exchange of messages between a client and server, Walsh's proposal, called Norm's Service Description Language (NSDL), focuses on how to pass the service's parameters so that the underlying program can access them.

Walsh said that his proposal was experimental. "It's purely an exploration of the problem space," he said. "I think the way you learn things is [to] stand up and say, 'Here's what I think,' and let other people come along and say, 'Here is why it won't work.'"

The two said that if a replacement should arise, it would probably involve both of their strategies.

In fact, John Cowan, senior Internet systems developer at Reuters, posted a language, Restful Services Description Language (RESEDEL), that attempts to meld the work of Bray and Walsh.

"If a bunch of people do become convinced that there's a need, there might be some more formal work on this in a standards body or industry consortium," said Bray. ▮



DevTrack

Close the gap between Support and Development.

DevTrack

Market leading defect and project-tracking with built-in customer support integration.
Manage the complete issue lifecycle from support to development and back.

Powerful	Integrated	Easy to use
Sophisticated workflow engine	QA Test Management	Intuitive user interface
Auto routing and escalation	Customer Support	Point-n-click administration
Beta customer Web portal	VersionLink for SCM	Windows and Web client

TechExcel

www.techexcel.com | 1-800-439-7782

More than 1000 companies worldwide have chosen DevTrack for its power and ease-of-use. Visit www.techexcel.com to download a free, fully-functional 30-day trial.

In the Process of Updating Software for

Three start-ups release management solutions focusing on automation,

BY DAVID RUBINSTEIN AND JENNIFER DEJONG

Dynamic process management is the new direction for Ivis Technologies, which last month released Xprocess, software that the company says provides a transparent look into how an organization gets things done.

Also last month, Texas-based start-up Ingenuus released version 5.1 of its namesake Web-based process software that the company says can be used to create applications such as IT trouble tickets or change requests with minimal coding. And Southfield, Mich.-based Proforma is offering ProVision BPMx, which takes a model-driven approach to process management.

Ivis CEO Chris Lank said, "Our goal is to give organizations a vehicle for putting process into their systems, to allocate role types, estimate how long projects will take, attach artifacts to processes and create a live project. You can say, 'We're ready to do project X.' Then you can start looking at role types, see the schedules and how much per hour it will cost."

Xprocess 1.0 has round-trip capabilities with Microsoft Project and Outlook, Lank said, noting there are Flash interfaces and an Eclipse interface for power users. There also are QA gateways, and workflow will be coming soon, he said, adding that the Rational Unified Process will be supported within the next month.

Lank said the product was developed specifically for agile software developers, after having its origins at TogetherSoft, where Lank worked. After founding Ivis in 2002, Lank regained the project, but said that analysts who had been shown the work said Ivis should expand its focus, as not only developers but business units and human resources, shipping and accounting departments all have processes in place, and need to be able to see if the processes are effective. "We don't tell them what their process needs to be; we give them sort of a mirror," Lank said.

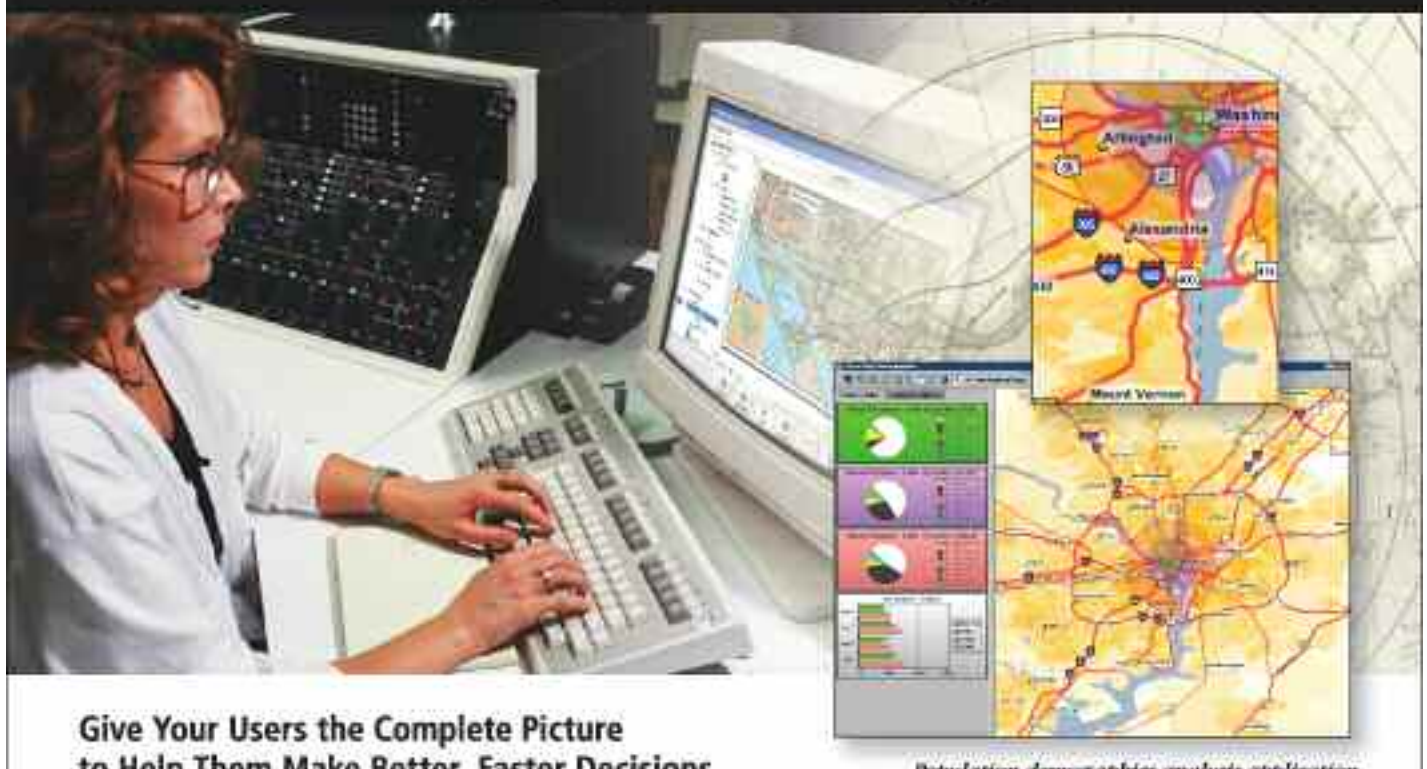
Project scopes and processes change often during the course of a project, and Xprocess is adaptable, Lank said. "If you need to yank 10 people off your team for 30 days, the schedules and estimates automatically adjust," Lank said.

Lank said Xprocess is built on top of the company's Xboost infrastructure software that adds security features and skins to Java and .NET applications. "You can skin it and make it your own process technology," Lank said.

PACKETS OF PROCESSES

Ingenuus' software is used for software life-cycle management, including release and

Build Geography Into Your Applications



Give Your Users the Complete Picture to Help Them Make Better, Faster Decisions.

Applications that incorporate geographic information system (GIS) technology give users a visual way to analyze their data and make more informed decisions. With ESRI® developer solutions, you can quickly and cost-effectively bring geography and mapping capabilities into your applications, regardless of whether you are building desktop, client/server, mobile, or Web applications.

ESRI developer solutions enable you to

- Quickly and cost-effectively integrate GIS capabilities into your new and existing applications.
- Select the developer tools that fit best with your architecture (ESRI's developer products encompass GIS components, servers, and Web services).
- Use the development environment of your choice, including Java™, .NET, COM, and C++, and deploy applications on a variety of platforms.
- Access and manipulate data in multiple formats.

To learn more about the ESRI developer solutions that are right for you, visit www.esri.com/develop.

1-888-288-1277
www.esri.com/develop
info@esri.com

Population demographics analysts application

Web-based property management system

Using GIS components within a commercial IDE

Process
modeling

document management, but not source code, said Vivek Prasad, co-founder and vice president of development. Its Web-based user interface is configurable to match the underlying processes, so "you don't have to map your process or vernacular to the tool," Prasad said, noting that the goal is to add process on top of the IDE and source-code management tools.

Within Ingenuus, users can create "packets" of screens to define all the steps of a change request, or what's required for the next software release, for example. Then, the packets can be strung together in a loosely coupled way, so that a document change packet can be tied to a change request packet and then a release packet to create an audit trail, he explained. "It's similar to an object model in that the QA step in a process, for instance, will have a set of steps to follow within the step of QA," Prasad said.

Company co-founder and president Chris Williams added, "There's a top-level process that defines everything from beginning to end; then there are sublevels." Thus, he said, minimal coding is required to create these types of applications.

The 5.1 release strengthens the tool's ability to link processes, Williams said. "You couldn't store a link in a template to fire off another process. It had to be done manually." There also are new hooks derived for Microsoft Excel, enabling users to generate reports from that software.

MODEL-DRIVEN PERSPECTIVE

Modeling is one technology; business process management, quite another.

But as BPM systems take hold, hybrid tools, designed to graphically depict and analyze key business processes, such as the steps involved in a company's supply chain, also are gaining popularity.

The latest company to throw its hat into the business process modeling ring is Proforma, which last month unveiled ProVision BPMx. Expected this summer, the offering is based in part on the company's existing ProVision Modeling Suite, said president Ron Pellegrino.

BPMx, which starts at US$2,995 per seat, is targeted directly at the business process modeling market, while the earlier offering is more broadly focused on enterprise modeling needs, such as mapping out Six Sigma and other quality initiatives, he said.

BPMx includes predesigned modelers, which, for example, let business analysts hone in on each step involved in a company's supply chain with an eye toward identifying and fixing inefficiencies, such as a long lead time from a certain vendor, Pellegrino said. Additional modelers make it easy to map out an organization's communication pattern, depicting which employees are involved with which processes, and at what locations they work.

New simulation capabilities let analysts dig down into a process to figure out, for example, which activities are causing delays, and which ones need more resources allocated to them. BPEL support lets developers take a process that has been designed and run a utility that converts a model to Business Process Execution Language, automating the process of adding the model to a BPM system, Pellegrino said. ■

InetSoft
open standards innovation

Style Report 7

Light Weight, Integration Ready, Enterprise Reporting & Analys

Traditional BI Challenges:
- Monolithic, resource intensive
- Proprietary software stack
- Requires ETL/Data warehouse

Style Report Solutions:
- Light weight, integration ready
- Open software stack, J2EE drop-in
- Real time transactional DB and OLAP

For more information and to download a free evaluation copy ..... www.inetsoft.com/sdt

Super Early Bird Rates End

EclipseWorld Technical Now

EclipseWorld is for enterprise developers, architects and development managers who want to take their company's applications to a higher level!

Over 50 great classes to choose from!

Keynotes Announced!

Mike Milinkovich is the executive director of the Eclipse Foundation. In the past, he has held key management positions with Oracle, WebGain, The Object People, and Object Technology International Inc. (which subsequently became a wholly owned subsidiary of IBM), assuming responsibility for development, product management, marketing, strategic planning, finance and business development.

Mike Milinkovich

Dale Fuller

Dale Fuller is president and CEO of Borland Software Corp. Fuller joined Borland in April 1999 with more than 20 years of experience in general management, marketing and business development in the technology industry.

Before being named president and chief executive officer, Fuller was president and CEO of WhoWhere? Inc., one of the leading community sites on the Internet. He was also a vice president and general manager at Apple.

"Eclipse is pleased to welcome BZ Media's launch of EclipseWorld," said Mike Milinkovich, executive director of the Eclipse Foundation. "Adoption of Eclipse-based tools and technologies is on the rise, and developers and development managers are looking for education and training. We think that it's important that leading-edge media companies like BZ Media are taking the initiative with this enterprise-focused conference."

For sponsorship or exhibiting information, contact

Charlie Shively
Northeast/Central
508-893-0736
cshively@bzmedia.com

Jonathan Sawyer
Southeast/Europe
603-924-4489
jsawyer@bzmedia.com

Julie Fountain
Southwest
831-476-1716
jfountain@bzmedia.com

Paula F. Miller
Northwest
925-831-3803
pmiller@bzmedia.com

June 30!

Register Online
www.eclipseworld.net

Program Available Online!

- Save money and improve developer productivity with Eclipse.
- Go beyond the IDE to master the wide range of Eclipse technologies.
- Discover the best, most effective Eclipse add-ins and plug-ins.
- Master techniques for building high-quality, more secure software.
- Get deep inside Eclipse's open-source architecture.
- Improve team collaboration using Eclipse.

eclipse FOUNDATION MEMBER

BZ Media is a member of the Eclipse Foundation.

eclipse WORLD

The Enterprise Development Conference

August 29-31, 2005

The Roosevelt Hotel • New York City

Produced by BZ Media

Platinum Sponsor: SYBASE

Gold Sponsors: ILOG, Exadel

Media Sponsors: SD Times, Software Test & Performance, EclipseSource, queue, Open Source, JDJ, Software, WebSphere, Extension Media, Methods & Tools

www.eclipseworld.net

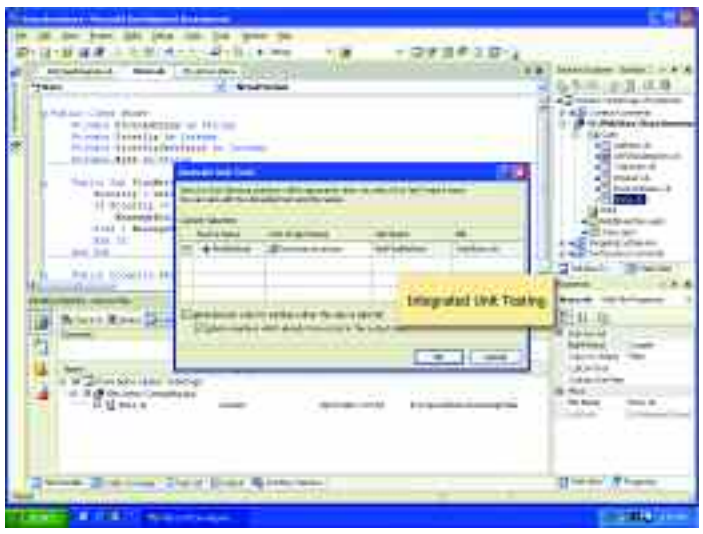
.NET Developers Dip Their Toes Into Team System

◂ continued from page 1

beta version and weighing in with firsthand reports.

Much of the early response to Team System focused on pricing, which Microsoft announced in late March, shortly before it made the beta available. It looked as if Team System was too expensive for small shops, said Stephen Forte, CTO of Corzen, an online market research company in New York City.

His team includes only five members, but "we need Team Foundation [the collaboration server on which Team System runs] so the folks in India and the folks in New York can talk," he said, noting that under the initial pricing and licensing terms, the MSDN Premium subscription did not include Team Foundation with each of the three, role-based editions (Team Architect, Team Developer and Team Tester). To get it, shops had to license Team Suite, which includes all three, paying US$10,939 per developer, plus $4,598 per year, after that.



Microsoft's new Unit Testing tool automatically generates and manages tests from within two Visual Studio Team System role-based editions.

NEW PRICING TERMS

Microsoft did right by Forte and other developers who head small teams, outlining better terms last month. Responding to widespread price complaints from bloggers, Rick LaPlante, the company's general manager for Visual Studio Team System, posted a May 12 blog entry (blogs.msdn.com/rickla) that said: "I'm happy to say that we've listened and changed our plans to address your concerns."

Microsoft will include at no additional cost a restricted, five-user license for Team Foundation Server in each Team System role edition, he said. (Each edition costs $5,439 per developer, plus an annual renewal price of $2,299.) He also noted that MSDN Universal subscribers will be able to upgrade to Team Suite by paying about $2,300, the incremental software assurance or renewal price for the duration of their agreements.

GOODBYE, SOURCESAFE

Team Foundation tops Chris Kinsman's list of favorite Team System tools. It's not based on Microsoft's earlier source-control system, Visual SourceSafe, "which was terrible," said Kinsman, of Vergent Software, a .NET consultancy in Redmond. "Team Build is great," he said, referring to the build management tool include in Team Foundation. "You can point and click your way to building software every day, triggering code coverage and unit tests [if you want to]." He also likes that he can customize the tool to modify the build in pieces. It offers .NET developers an alternative to homegrown tools, or open-source offerings such as NAnt, which has a steep learning curve, he said.

Kinsman is currently using the Team System beta, with a client project. "But we aren't going live on this," he said. "We don't have assurance from Microsoft that everything in this beta will be in the next version. They said in the documentation [that] they aren't going to necessarily pull our data forward."

In addition to Team Foundation, which he plans to purchase under the new terms Microsoft is offering small shops, Corzen's Forte is impressed by two of the Team Architect tools: Logical Datacenter Designer and Deployment Designer. The tools let teams determine at the design stage whether a planned application will deploy on a company's existing infrastructure. Forte knows firsthand the value of factoring in such concerns upfront. "We were deploying a large app, and we never thought about that," he said, recalling an earlier project for a previous employer. "We had to alter the app to mold it to the infrastructure. It took some rewriting on our part."

Both designers, as well as the others included in Team Architect (see sidebar), are known as DSL tools, referring to the Domain-Specific Language in which they were written, said Microsoft's Ajay Sudan, a technical product manager for Team System. The real value of Team Architect is that any developer—Microsoft, third parties or enterprise developers—can extend it using the DSL authoring capabilities included in the Visual Studio software development kit.

For instance, a health-care developer could snap in a DSL tool that generates the code to link to the green-screen, mainframe applications that still dominate that industry, said Tim Huckaby, CEO of InterKnowlogy, a Carlsbad, Calif.-based .NET consultancy.

DSLs also can be used to automate commonplace, code-intensive chores, such as adding items to a drop-down menu, a task that typically affects "a zillion places in your code," he said. DSLs take some work to set up, but once they are complete, you can add menu items often with only a single line of code. "It's a beautiful thing. Sheer bliss," Huckaby said. "My guys hate it when I say this, but [with Team System], writing good apps isn't that hard anymore."

Also included in Team Architect (as well as in Team Developer, Team Tester and Visual Studio 2005 Standard Edition and higher) is Class Designer, essentially Microsoft's answer to the class designer diagrams provided by modeling vendors that base their tools on the Unified Modeling Language. Jonathan Cogley, CEO of Thycotic Software, a Washington, D.C., consultancy that specializes in agile software development, was impressed by non-UML-based Class Designer's ability to map out an application's classes and generate code. "And it's quick at moving backwards and forwards," he said, referring to the tool's round-trip engineering capabilities (also found in some UML-based tools), which keep the model and the code in sync. But in the beta, Microsoft is dealing with a finite amount of code, noted the former Java developer, who now writes in C#. "How well will Class Designer scale for large applications?" Cogley wondered.

COMPETING PARTNERS?

Microsoft's new Class Designer doesn't mean that .NET developers who want to use industry-standard UML tools are out of luck. Team System was designed to support tools from third-party vendors, said Microsoft's Sudan. "There are so many opportunities for partners to plug into." Borland Software said earlier that it plans to provide for Team System its Together modeling offering, which supports UML 2.0. Another partner, Detroit-based Compuware, was expected to unveil its Team System offerings at Microsoft's Tech-Ed conference earlier this month in Orlando, Fla. Both Borland

▸ continued on page 24

A QUICK TAKE ON TEAM SYSTEM TOOLS

Visual Studio 2005 Team System, Microsoft's life-cycle development platform, includes role-based editions for architects, developers and testers, as well as Team Suite, which includes all three.

Each edition is built on top of Team Foundation, the collaboration server that delivers build management, source-code control and work-item tracking features, as well as reporting tools for both business executives and software development managers.

TEAM ARCHITECT

Application Designer: For designing applications that fit into a service-oriented architecture. Allows the architect to specify key assumptions about the application, such as whether it requires authentication.

System Designer: For defining how applications will interoperate as systems.

Logical Datacenter Designer: For creating a model of the data center, including the servers and pathways that connect them, on which the application will be deployed.

Deployment Designer: For validating that system components target servers that can properly support them. That is, can the planned application be deployed successfully on the company's existing infrastructure?

Class Designer: For designing an application's classes, visualizing the code associated with each and keeping the code and model in sync. Also included in Team Developer and Team Tester, as well as Visual Studio 2005 Standard Edition and higher.

TEAM DEVELOPER

Static Code Analyzer: Based on Microsoft's earlier offering FxCop, it analyzes source code, looking for things such as poor naming conventions or code that is vulnerable to security attacks, such as SQL injections.

Code Profiler: Monitors for performance issues while code is running.

Unit Testing: Generates unit tests for classes, which the developer then fine-tunes to test the code in question. Also included in Team Tester.

Code Coverage: Helps determine how effective unit tests are. That is, what percentage of the code do they cover? Also included in Team Tester.

TEAM TESTER

Load Testing: For measuring an application's ability to handle an increasing number of requests from users who access it.

Manual Testing: For managing manual tests, such as the step-by-step user click-throughs that are used to find bugs.

Test Case Management: For organizing all of the tests to which applications are subjected.

—Jennifer deJong

Perforce.

The *fast* SCM system.

For developers who don't like to wait.

Tired of using a software configuration management system that *stops* you from checking in your files? Perforce SCM is different: fast and powerful, elegant and clean. Perforce works at your speed.

[Fast]

[Scalable]

[Distributed]

Perforce's lock on performance rests firmly on three pillars of design. A carefully keyed relational database ensures a rapid response time for small operations plus high throughput when the requests get big - millions of files big. An efficient streaming network protocol minimizes the effects of latency and maximizes the benefits of bandwidth. And an intelligent, server-centric data model keeps both the database and network performing at top speed.

It's your call. Do you want to work, or do you want to wait?

PERFORCE
SOFTWARE

Download a free copy of Perforce, no questions asked, from www.perforce.com. Free technical support is available throughout your evaluation.

All trademarks used herein are either the trademarks or registered trademarks of their respective owners.

First Impressions of Team System

◂ continued from page 22

and Compuware also provide tools for Visual Studio 2003.

How do Compuware's code profiling, load testing and other development tools compare with those Microsoft provides in Team Developer and Team Tester?

"Microsoft's are entry-level, while Compuware's are more sophisticated," claimed Mark Eshelby, a product line manager for Compuware's QA Center, which includes load-testing tools.

Microsoft did not disagree. "We do load testing, but there is an opportunity for partners to provide more advanced tools," said Sudan. Some of Compuware's tools as well as those from other third-party vendors are in their eighth or ninth generation, he added.

If anything, Microsoft's foray into testing tools is good for Compuware, said Rob Straight, product manager of the company's DevPartner line, which includes code profiling tools. "A lot of people aren't using automated testing tools at all, so Microsoft is bringing a new focus to the importance of automated testing."

While Microsoft's code profiler is aimed at a single application, Compuware's offering also pulls in data from applications running on remote machines, including those developed in Java. Compuware's load-testing story is much the same, supporting .NET, Java and other enterprise applications from within Team System, Eshelby said.

Support for third-party tools is a good thing, said Michele Leroux Bustamante, principal software director at iDesign, a San Jose-based .NET consultancy. "You don't want to give up tools you are already using. But a unifying license under one roof is always going to be less expensive," added Bustamante, who is Microsoft's regional director for San Diego.

LIFE-CYCLE VISIBILITY

Unity is the whole point of Team System. Because Team Architect, Team Developer and Team Tester are integrated with one another, and with Team Foundation, "you get visibility into the entire life cycle," said Bustamante. That lets companies see progress earlier in the cycle.

She said Team System offers developers an opportunity to adopt best practices, delivering better software, on time. "I have worn many hats" and managed many projects, she said. "There were only one or two cases where we shipped on time."

One feature she liked is Team Foundation's ability to produce graphical reports that detail progress. "When reporting to the people who are paying for the system, you need pretty pictures," said Bustamante. Better still, "you don't need to punch in data after the fact" to create such reports. "They come from developers doing their work."

Like other .NET developers who have worked with the Team System beta, Bustamante said she didn't have much experience with IBM's competitive life-cycle offering, Rational Application Development Platform, which the company delivered last year.

"But the competition has years of maturity," InterKnowlogy's Huckaby said. "Microsoft is a late player." ▮

An Open-Source Alternative to Team System?

BY JENNIFER DEJONG

.NET developers have long relied on third-party tools, including open-source offerings that first appeared on developer James Avery's "must-have" list, published on MSDN last year.

Asked how Microsoft's plans for Visual Studio 2005 Team System are likely to impact his picks, Avery, who now heads Infozerk, a Cincinnati-based .NET consultancy, said that, with a few minor changes, the list still stands.

For example, the code analyzer FxCop is now built into Team System (under the name Static Code Analyzer). And NUnit, for writing unit tests, is also being replaced by a Team System tool known simply as Unit Testing. (Microsoft characterized the Team System offering as "similar to NUnit," noting that NUnit's author, James Newkirk, now works for Microsoft.)

Neither the unit testing nor static code analysis tools are included in other editions of Visual Studio 2005, so the need for NUnit and FxCop still remains, said Avery. Not so for NAnt, the popular open-source build tool. It may disappear now that Microsoft plans to include its own build offering, MS-Build, in Visual Studio 2005, Avery said. Team System includes an enterprise build tool known as Team Build.

Avery said his must-have list is based on tools he and his developer friends have found most useful. "The criteria was that they are all free and that they make a difference."

Asked what he thinks of Team System, he said: "The weakness in Team System is that it is segregated into three products, based on roles." In the real world, roles are fluid. "You might be an architect for two weeks, and a coder for a month."

But his bigger gripe is that Team System is too expensive (even with the amended pricing Microsoft announced for small shops in May). That's why news of a possible open-source Team System alternative, known as nTeam (sourceforge.net/projects/nteam), based on Avery's own must-have tools list, was music to his ears. "I'm not sure it will get off the ground, but I think it's a great idea," he said. ■

TEN MUST-HAVE TOOLS FOR .NET DEVELOPERS

NUnit: To write unit tests
NDoc: To create code documentation
NAnt: To build solutions
CodeSmith: To generate code
FxCop: To police code
Snippet Compiler: To compile small bits of code
Two different switcher tools: The ASP.NET Version Switcher and the Visual Studio .NET Project Converter
Regulator: To build regular expressions
.NET Reflector: To examine assemblies

Source: James Avery, MSDN Magazine msdn.microsoft.com/msdnmag/issues/04/07/MustHaveTools/default.aspx

Wind River Goes From Closed to Exposed

◂ continued from page 1

in June of that year founder and then chairman Jerry Fiddler was quoted in the San Jose Mercury News saying that Wind River's desire was to build a profitable business with Linux.

According to John Bruggeman, the company's chief marketing officer, the company had little choice but to develop its own Linux distribution, despite having once vowed that it would not. As Wind River began to engage prospective Linux customers, it found that for many types of applications it simply had no choice, he said.

"You had to break the seal," Bruggeman said, adding that distributions of commercial embedded Linux vendors "didn't have the robustness and the quality that the Wind River brand represents." Available now as part of its new General Purpose Platform, Wind River Linux is based on kernel 2.6 from kernel.org and conforms to the Carrier Grade 2.0 specification.

The platform also encompasses VxWorks 6.1, the latest version of Wind River's proprietary RTOS that includes an implementation of the Transparent Interprocess Communication (TIPC) protocol and broader hardware support. General availability is set for this month.

"This is a 180-degree turn for Wind River," said John Carbone, vice president of marketing at Express Logic, which sells a competing real-time operating system, ThreadX. "They used to be relatively adversarial toward Linux and open source in general," he said, adding that Wind River is now not only embracing open source, but supporting ThreadX, a competitive RTOS, in Wind River's Workbench 2.3 integrated development environment.

REVVING THE WORKBENCH

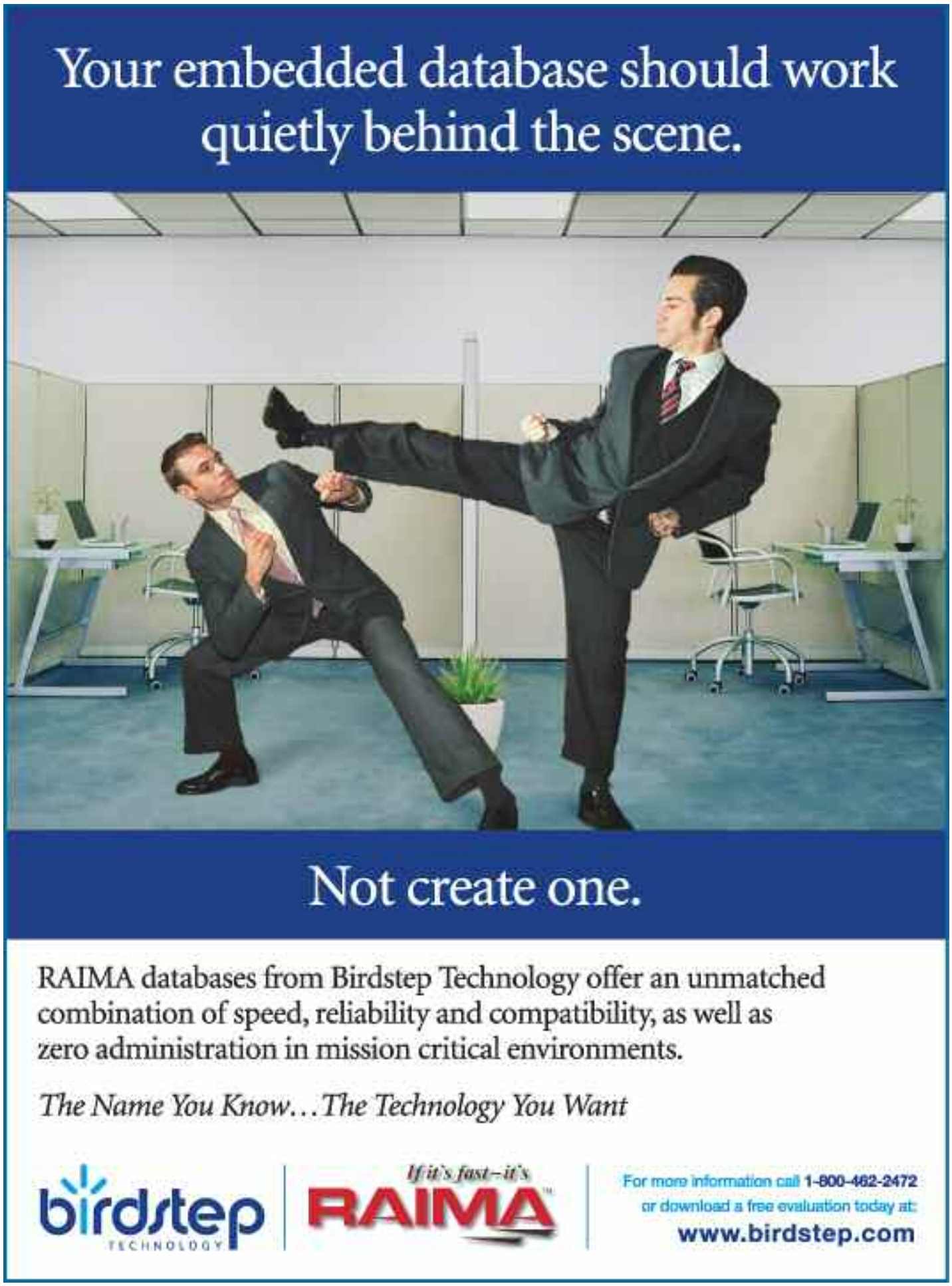
The new version of Wind River's Workbench offers two main new features: support for Express Logic's ThreadX RTOS and also an OS-Awareness API, which Wind River says will let the IDE accommodate any real-time operating system.

For ThreadX, Workbench can now perform stop-mode debugging with Wind River's ICE and PROBE debuggers using JTAG target connections. "That's what most of our customers do. You can stop at a breakpoint and check memory registers and follow a thread or check kernel objects," said Carbone.

Workbench also now encompasses all of Wind River's development tools, including its Sniff+ code analysis, visionPROBE hardware bring-up and on-chip debugging tools.

"There is now one consistent seamless user interface across all the different developer types that contains all the probes, emulators and other technologies," Wind River's Bruggeman said.

Wind River will begin offering Workbench—still priced starting at US$3,000 per seat—in less-expensive editions tailored for specific development needs, including editions with and without hardware debugging capabilities. The IDE, which has long supported Linux, now works with MontaVista Linux; distributions from Red Hat and kernel.org had been supported previously. ▮



Faster *x*86 Chip Keeps Its Cool

AMD says LX-800 powerful enough for Linux, Windows XP

BY EDWARD J. CORREIA

Advanced Micro Devices in late May unveiled the LX-800, the latest in its Geode line of embedded application processors that it says offers enough power to run Linux or Windows XP efficiently enough not to require fans or even heat syncs.

"Now you can now bring *x*86 into ultra-mobile PCs and tablet PCs without compromising weight and battery life," said Charles Dittmer, product marketing manager for the LX-800.

The LX-800 combines an application processor with a Northbridge peripheral controller, which handles memory, display graphics and other peripherals. Together they consume about 1.6 watts, he said. The LX-800 alone consumes about .9 watts.

With a footprint similar to its Geode brethren, the chip, according to Dittmer, roughly doubles the performance of the Geode GX 533, the next closest in the line, while consuming about the same power. Dittmer credits performance gains mainly to an added 128KB L2 cache and an increase in L1 cache to 64KB from 16KB. The chip also supports 400MHz DDR memory compared with 266MHz of the GX 533.

The LX-800 includes a Northbridge peripheral controller and has double the speed of its predecessor while using about the same power, AMD claims.

Today's embedded market, Dittmer said, is being driven to "enable a mobile work force with shrinking form factors, better battery life and ease of use. This new device helps enable that [in a way] *x*86 has not done before for tablet and clamshell machines with 5- or 7-inch screens." Production is set to begin on the LX-800 this month; pricing starts at US$45 in lots of 10,000.

Dittmer claimed that the chip's low-power consumption will enable low-cost, fanless designs for thin clients, POS terminals, single-board computers, industrial control systems and personal video recorders, set-top boxes, HDTVs and other consumer devices, all markets in which Linux plays a significant role. "As these devices get smaller and more economical, Windows XP and other Microsoft products might become cost-prohibitive, and Linux certainly plays there." ▮

PalmSource: Pro Developers In, Palm Brand and Nagel Out

BY EDWARD J. CORREIA

Palm OS creator PalmSource in late May launched Inside Track, a subscription program giving professional developers first dibs on tools and operating system releases as well as priority scheduling in the company's testing labs.

PalmSource still will offer free development tools and early access releases, but according to Dino Brusco, vice president of technical services, "we find it's much more productive to focus [beta-product revision] effort on professional developers so we can prioritize our support resources." The price, US$149 per year, serves to filter the approximately 8,000 new developers he said are signing up each month.

The news came at the annual PalmSource Mobile Summit and Developer Conference in San Jose, where the company also launched the Geographic Developer Partner Program, under which commercial Palm developers around the world can get greater visibility and marketing benefits in exchange for providing Palm development support in their local area. The first to sign up was Italian mobile solutions provider Goware.

The summit also was the setting for David Nagel's last appearance as PalmSource CEO; he resigned effective May 22. Michael Mace, PalmSource's chief competitive officer, said only that the resignation was due to "a mix of personal and business reasons."

The company also sold rights to the Palm brand name to palmOne for $30 million. "It is weird," lamented Mace. "But the bottom line is that it was a stupid idea to try to share the brand between the two companies when we split. It just didn't work." PalmSource will have four years for its transition; both companies plan to change names. ▮

AmeriPride Services Inc., a leader in the garment and linen business, has an immediate opening for an experienced **.NET Developer** in our corporate office.

Key responsibilities include:

- Collaborate with other professionally educated computer professionals to design and develop a .NET store for our catalog sales division.
- Collaborate with professional IT staff to develop a future route accounting platform.
- Recommend to IT management, and subsequently design and develop handheld applications.
- Assist professional IT staff in testing and troubleshooting the development and production applications.
- Develop and design applications using UML or similar methodologies.
- Collaborate with other IT professionals to develop application life cycles through the applications' production release and maintenance.
- May supervise a team of web developers.

Qualified candidates will possess a Master of Science degree with a major that includes an M.S. degree in Computer Science or equivalent degree as established by a written evaluation. Must be a Microsoft Certified Professional with not less than one-year (working) experience with object-oriented design. This must include e-commerce storefront design and development including designing N-tier applications using a combination of the following technologies: C#, ASP.NET, UML, Transact-SQL, JavaScript, CSS, XML, Xpath, and MVC. Requires at least one year experience designing and developing ASP.NET Web Services with MS SQL Server back end, utilizing N-Tier application architecture. Must have completed design and development of at least one project using the Compact Framework. Must have served as a leading member of a team of web developers. Experience may be concurrent.

Interested candidates should submit their resume via mail, e-mail or fax to:

AmeriPride Services, Inc.
Attn: Jeremiah Munson
10801 Wayzata Blvd.
Minnetonka, MN 55305
(952) 738 – 3169
jeremiah.munson@ameripride.org

AmeriPride® Linen & Apparel Services

PEG® the leading GUI for Embedded Systems

- PEG+ - Full Featured Windowing in C++
- C/PEG - Smallest Footprint in ANSI C
- Royalty Free
- Fast execution speed
- Completely ROM-able
- Delivered with Full Source Code
- Development Tools including FontCapture, PEG WindowBuilder, and ImageConvert
- Complete set of screen drivers included
- Completely customizable
- Industry leading RTOS Support
- Supports all popular target processors, video controllers and I/O devices
- Multi-lingual support – 2-byte character sets & UNICODE string encoding
- Event-driven programming model
- Application Design Services
- Knowledgeable and timely support to users around the globe

SWELL software

GRAPHICS SOFTWARE FOR EMBEDDED SYSTEMS

WWW.SWELLSOFTWARE.COM 810-982-9955

What's Holding Back OMG's Model Driven Architecture?

Immaturity, UML complexity and lack of personnel to create implementations are drawbacks

BY CAROL WEISZMANN AND SUSAN MESSENHEIMER

These days, information technology implementations need to cost less to create, deploy and manage. And they need to work better with what organizations already have in place.

Ideally, the focus of an IT implementation should be on business function rather than on the esoterica of the technology itself. Most often this is best achieved by abstracting—that is, modeling—business functionality.

"All forms of engineering rely on models as essential to understand complex real-world systems," noted Alan W. Brown, IBM distinguished engineer. Yet most software developers don't use separately defined models, opting instead for a code-only approach, making it tough to distinguish between important elements and bells and whistles—and much more costly to manage change as programs evolve and become more complex.

Given that modeling can help address several of developers' "top of mind" issues and concerns—notably application life-cycle management, agile development, business integration and service-oriented architectures—it's curious that so few enterprise development teams have embraced the best-known approach to model-driven software development: Object Management Group's Model Driven Architecture (MDA), a standards-based effort to build programs from models using model transformations.

MDA has been around since late 2001 and is supported by development tools from more than 50 vendors as well as open-source groups such as OMEX AG (openmdx.org).

Achieving agility. The idea is to move, via transformations, from business models (called computation-independent models, or CIMs) to platform-independent models (PIMs) to platform-specific models (PSMs) to code.

"The requirements must be traceable from the CIM to the PSM and vice versa," said Francisco Javier Lomas Beltran, a Microsoft .NET certified application developer working for Ecuador-based software development company Kruger, which is adopting MDA. "This is one of the keys to knowing that the abstraction of the problem is well done. Another key is the record of the transformations, including which element was transformed to which element in each model and what mappings have been used to accomplish that."

Higher quality, lower costs. Harold Teets, senior vice president and CTO/CIO at Xspedius Communications, said that his firm's experience with MDA (using tools from Kabira Technologies and IBM to build customer resource management capability) "has fostered a more global look at data replication and helped provide more focus on systems integration."

This, he pointed out, has produced rapid improvements in internal data quality, improvements in productivity, and reductions in data duplication, rework and application support needs. "We learned," Teets said, "that leveraging existing data stores and building an integration services layer that insulated implementations via adapters resulted in reduced software development and integration costs."

Fast too. "Some of the highest-speed systems in the world are MDA systems," asserted Dirk Epperson, vice president of product strategy at Kabira, a real-time software development firm committed to MDA. "We have customers with applications that are 100 percent model-driven—that is, there is no C++ or Java in the application models—and the systems handle well over 10,000 transactions per second in production and have been tested at many times that rate."

IMMATURITY, FUD AND THE FUTURE

So why hasn't MDA been more widely embraced? "The major weakness in MDA is that it is immature," said Epperson. "It's unlikely that models based on one vendor's tools could be used on another vendor's MDA with no changes." What's more, there is as yet no single compliance test that determines MDA compatibility.

Tom Gullion, Borland Software's product manager for Together products, pointed to another indication of MDA as a work-in-progress: "There's a general perception that UML was already bloated at version 1.5," he noted. "UML 2.0 has added a significant amount of complexity to the specification."

Although UML is standardized for defining program structure, observed Epperson, program logic has come to UML only recently in the form of "Action Semantics," which serves as a high level of abstraction for this logic. "But, there is not, to date, a single syntax for the Action Semantics," Epperson said. "Instead, vendors comply with different syntaxes for the same semantics. A single syntax will make more IT organizations comfortable with an MDA approach."

Paresh Yadav, chief technology officer at Saint Technologies, a Canadian development company following MDA but yet to commit to it, cited several additional problems: "There's a lack of qualified professionals to implement MDA, a steep learning curve, and the upfront cost prohibits wide-scale adoption—even though MDA can provide huge cost savings over the life cycle of an application due to savings in supporting

MDA: SEPARATING THE PARTS TO STREAMLINE THE WHOLE

Addressing the complete software development life cycle—designing, deploying, integrating and managing applications as well as data—MDA incorporates key OMG-specified services (including directory services, event handling, persistence, transactions and security) and leverages several OMG standards:

UML: The widely embraced Unified Modeling Language.

MOF: The Meta-Object Facility, which unifies UML, UML profiles and MDA platform-specific models.

CORBA: The Common Object Request Broker Architecture, OMG's middleware standard.

CWM: The Common Warehouse Meta-model, standardizing metadata interchange in data-warehouse and business-analysis environments.

XMI: The XML Metadata Interchange, a standard for using XML to store and exchange models.

TWO SCHOOLS OF MDA PHILOSOPHY AND PRACTICE

The Executable, or Translationist, School:

MDA is basically programming with pictures.

Mike Burba, marketing director of Compuware's application development solutions, explained: "All application information should be described in models, and those models should be 'compiled' into the target platforms (J2EE, .NET, CORBA, etc.)."

The Pragmatic, or Elaborationist, School:

Achieving 100 percent code generation from models is impractical.

Mike Sawicki, product manager of Compuware's OptimalJ, spelled it out: "Models should be a high-level business abstraction of the application, pure in the sense that they contain no meta-information of the technology platform on which the application is to be deployed." But since it's impossible to achieve that level of abstraction with the exclusive use of models, pragmatic implementations of MDA (including Compuware's OptimalJ) "allow [platform-independent models] to be translated into [platform-specific models], tweaked and enriched and then translated into code that can also be elaborated upon."

Modeling, MDA and Microsoft

BY CAROL WEISZMANN AND SUSAN MESSENHEIMER

and enhancing the applications."

Thus vendor-neutral MDA makes it easier for IT architects to efficiently design systems that can integrate legacy environments with the constantly changing parade of new standards, such as XML, .NET, EJB/J2EE and CORBA.

"The application of open industry standards as the basis for automation of transformation between models is an important additional value to businesses and developers," said IBM's Brown. "It means that there can be rigor to the process being used, the transforms can be developed and managed as reusable assets, and the efficiency and quality of the solutions being developed can be increased."

THEN THERE'S MICROSOFT

Not surprisingly, Microsoft does not explicitly support MDA. But, according to Keith Short, architect for the company's Visual Studio Enterprise tools, Microsoft developers are embracing their own version of modeling.

The trouble with OMG's MDA, contends Microsoft in a document called "Modeling Strategy and FAQ," first released to SD Times, is that it addresses "only a small subset of what we believe are the real issues that must be addressed to enable effective model-driven development." For instance, no single set of models can describe all possible systems effectively. "A single PIM and a single PSM per target platform, all developed using a general-purpose modeling language, as prescribed by MDA, are insufficient to support the significantly greater levels of automation promised by model-driven development," the document reads.

In a document called "Modeling Strategy and FAQ," dated May 20 and obtained by SD Times, Microsoft lays out its view of model-driven development and the ways in which Visual Studio 2005 Team System, now in beta, will fulfill its vision. Among the key elements of the Microsoft perspective:

"A model should be a first-class artifact in a project—not just a piece of documentation waiting to become outdated. Models have a precise syntax, are often best edited and viewed using a graphical tool, and embody semantics that determine how domain-specific concepts in models map to other implementation artifacts, such as code, project structures and configuration files. In this way, a model is a lot like a source code file, and the mechanisms that synchronize it with other implementation artifacts are a lot like compilers."

While models can be "compiled," they are more often implemented by a combination of generated and hand-edited artifacts. "In such cases, it is critically important to carefully manage the way the generated and hand-edited artifacts fit together." Thus Microsoft supports "techniques to ensure that generated and hand-edited artifacts are kept separate, and that code added by a developer is never disturbed when boilerplate code required by a tool is generated. These techniques include the use of class delegation and inheritance, and particularly the use of 'partial classes.'"

Microsoft calls these sorts of modeling languages Domain Specific Languages (DSLs)—a DSL is "a small, highly focused language for solving some clearly identifiable problem." Examples include SQL for data manipulation and XML for document structure definition. "Good ways to find candidate DSLs are to identify the patterns used by developers, and encapsulate them into a modeling language, or to surface the concepts in a software framework as abstractions in a modeling language that can then generate small amounts of code that extend the framework. These techniques allow us to control the amount and complexity of generated code."

Eschewing a one-size-fits-all approach to modeling, Microsoft instead prefers to gather custom collections of DSLs into "Software Factories," which encompass and extend MDA "where MDA is defined in a broader sense than the official definition based on PIMs and PSMs." ▮

Microsoft also sees UML as overly complex and failing to address in a natural way "critical issues for modern application development, such as database design, testing, deployment, service orientation, component-based development, and user interface construction." Still, it recommends using UML—which will ship with Visual Studio 2005—for sketching, whiteboarding, napkins, documentation and conceptual drawings not directly related to code. It prefers precisely defined DSLs and DSL-based tools for:

- Precise abstractions from which code is generated.
- Precise abstractions that map to variation points in frameworks and components.
- Precise mappings between DSLs.
- Conceptual drawings that have precisely specifiable mappings to other DSLs or to code artifacts.

MDA VERSUS DSL

Andrew Watson, vice president and technical director at OMG, pointed out what he regards as problems with Microsoft's approach.

Microsoft is not using relevant standards, though Watson said its position is evolving, since it now may "support interchange with popular UML and MOF tools" by using OMG's standard XML Metadata Interchange (XMI) format.

Microsoft doesn't support platform independence. Watson noted that all real-world customers actually use multiple platforms. "Because supporting multiple platforms is an overriding concern for most IT customers," he said, "MDA places a strong emphasis on it."

Watson continued, "Microsoft doesn't provide much support for long-term maintenance of legacy applications. In contrast, MDA emphasizes long-term support and maintenance"—an important factor for any business that must sustain the value and use of its legacy apps.

"Despite UML's popularity with users, Microsoft is avoiding using it where it would be applicable," said Watson. "Instead, Microsoft advocates use of Domain-Specific Languages, which in

▸ continued on page 30

Why Hasn't MDA Seen Wide-Scale Adoption?

◂ continued from page 29

many cases are very reminiscent of UML diagrams."

A substantial collection of MDA success stories (www.omg.org/mda/products_success.htm) in a wide range of sectors—including banking, aeronautics, electrical engineering, government, railroads, software development, logistics and online education (some with details about cost savings and productivity improvements)—challenge the contention that MDA is unable to handle modeling requirements across distinctly different business sectors.

As Watson sees it, Microsoft is embracing MDA without actually saying so. Their point of agreement seems to be the Meta-Object Facility (MOF) standard, which, Watson said, "is the foundation of MDA."

Opposing the brave new world that MDA and its competitors represent is no small amount of fear, uncertainty and doubt. "Paradigm shifts require cultural change, and change is difficult for any organization," said Mike Burba, marketing director of Compuware's application development solutions.

"One change that development teams must undergo is organizational in nature: Some members of the team are going to be asked to play new roles," said Mike Sawicki, product manager of Compuware's OptimalJ. "Because less time is spent on the implementation phase of development projects, more emphasis, proportionally, is placed on application design. So some developers need to adopt new technical skills, such as UML modeling, and others must develop new 'soft' skills, like being able to effectively communicate with the business."

But Saint Technologies' Yadav is optimistic. "Recent widespread adoption of tools that help 'visualize' code is a good indication that eventually MDA will gain a larger following." ▮

MOF AT A GLANCE

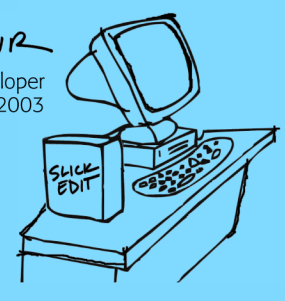
The collection of standard interfaces called the Meta-Object Facility constitutes a common, abstract language that can be used to define, construct and manipulate interoperable metamodels, thus enabling dissimilar metamodels to reside in the same metadata repository (which stores data models and domain object models) as long as they all conform to MOF.

At the heart of OMG's Model Driven Architecture, the MOF specification defines a small set of constructs for object-oriented information modeling that can be:

- Extended by inheritance and composition to define a richer information model supporting additional constructs.
- Or used as a meta-metamodel (or an ontology)—that is, as a model for defining information models, even those differing (in ways both small and large) from the MOF itself. Among the metamodels the MOF has been used to define are the Unified Modeling Language (UML) and the Common Warehouse Meta-model (CWM).

"When accepting this job, my only request was that SlickEdit be waiting for me when I arrived."

JEFF McARTHUR
Game Developer
and SlickEdit user since 2003



Now *that's* slick thinking.

Here at SlickEdit, we often think only one thing is slicker than our software—the developers who use it. For more than 16 years, our multi-language development tools and advanced code editors have supported the world's most skilled professionals, whether they're developing on Windows, Linux, UNIX, or Mac OS. We know that our products enable faster, more accurate coding. Apparently, our users think so too.

slickedit®
www.slickedit.com

See what you think. Download a FREE trial at www.slickedit.com/trial or call 1.800.934.3348.

- ACHIEVE a Better Return on Investment From Your Test Teams
- GET the Highest Performance From Your Deployed Applications
- OPTIMIZE Your Web Testing Strategies
- LEARN How to Apply Proven Software Test Methodologies
- NETWORK With Other Test/QA & Development Professionals

THE SECOND ANNUAL

Software Test & Performance CONFERENCE

"This was the most practical conference I have been to in eighteen years."

– Mary Schafrik
B2B Manager/QA & Defect Management
Fifth Third Bank

"New tips and best practices in software testing were presented by excellent speakers and professionals."

– Ella Naydorf
QA/Test Manager
Booz Allen Hamilton

November 1-3, 2005
The Roosevelt Hotel
New York City

www.stpcon.com

For Sponsorship and Exhibitor Information Contact David Karp at 631-421-4158 x102 or dkarp@bzmedia.com today!

The Roosevelt Hotel
Madison at 45th
New York City
www.therooseveltthotel.com

www.stpcon.com

Produced by BZ Media
Software Test & Performance
SD Times

EDITORIAL

Visual Studio Tightens Its Grasp

The software tools world is continuing to bifurcate into two pieces: Microsoft's Visual Studio and everything else. With the latest version of its tool chain, and thanks to an ever-growing coterie of partnerships, Microsoft is demonstrating that there's little reason to use any other tools for Windows or .NET development.

While this might seem inevitable today, that wasn't always the case. Microsoft's record with tools has always been spotty. Sure, the company's oldest products were software development tools, such as Bill Gates' legendary BASIC interpreter for the Altair 8800. But although Redmond always offered tools for its DOS and Windows platforms, programmers felt free to look elsewhere—thus the rise of companies like Borland, the excellent C++ and Fortran compilers from Intel, the editors from SlickEdit, and many other tools.

Over the years, the increasing sophistication of Microsoft's tools, such as the introduction of the first Visual Studio in 2000, began to offer a stronger pull for Windows developers. The rise of .NET, and the fact that VS.NET was developed in lockstep with the .NET Framework, tightened Microsoft's grasp on programmers.

Since 2000, third-party Windows tools providers have been gradually pushed out of the mainstream into a few different camps. Some, like Borland, focused on cross-platform development, an area that Microsoft wouldn't touch with the proverbial 10-foot pole (unless you defined "cross-platform" to mean targeting both Win32 and .NET).

Others offered application life-cycle management tools that interoperated with Visual Studio but added sophisticated requirements management, source configuration management, modeling, testing and quality-assurance features that teams required. A third group focused on integrating their tools into Visual Studio, adding functionality that Redmond hadn't built into the IDE.

With the imminent release of Visual Studio Team System, Microsoft has shown that it can expand its brief to cover one of those areas: the full application life cycle. While Microsoft is notorious for having problems with "version 1.0" software releases, the beta reports about parts of Team System are generally positive.

Plus, the kinder-and-gentler team at Microsoft has left plenty of room for third-party innovation to bolster Team System's weaker parts; many of the historic ALM companies are rushing to strengthen Microsoft's platforms. This will, in turn, consolidate Microsoft's hold on Windows/.NET developers, raising the barriers to entry for any other IDE vendors, and making it harder for existing IDE and tool-chain alternatives to survive and flourish.

For example, one of the other major tool chains existing today is the far-newer Eclipse platform, which is centered on Linux and Java but has the potential to expand onto Windows. However, with the exception of cross-platform shops for whom using a single IDE is imperative, even Eclipse is unlikely to make inroads into the Windows/.NET market.

Is this bad? Frankly, it's too early to know. But if Microsoft subverts or destroys all of its competitors, Visual Studio and Team System might atrophy. That would be bad news for developers—and given Microsoft's history, it's all too possible. ▮

LETTERS TO THE EDITOR

A Total Misunderstanding of Concepts

I normally enjoy Allen Holub's Java Watch, but in "Is Software Engineering an Oxymoron?" [March 15, page 28], he misunderstands computer science, programming, mathematics, software engineering and education.

Holub implies some unidentified change in "the nature of computer programming" should similarly redefine computer science, but this puts the cart before the horse. Computer science supplies the foundation for programming, as physical sciences underlie physical engineering.

Holub's statement "Computers were little more than glorified adding machines" shows a belief that mathematics is principally for arithmetic, but computers were then what they are now: abstractions capable of becoming any machine described adequately. Programming is description, though procedural gadgeteering has overtaken functional and declarative notations, crippling the thinking of our industry.

Training in mathematics is not "of little or no value when it comes to writing good computer programs." Mathematics is a focused way of strengthening the mind, an exercise of benefit to most human endeavors. The difficulty identifying where computer science ends, and logic and mathematics begin, illustrates their interdependence.

The goal of programming is to ensure the satisfaction of a specification's constraints, using algorithmic mechanisms and engines (still sadly primitive). The key design process is formulating specifications, and even informal proofs help demonstrate whether your programs satisfy them.

Software engineering is about more than process, as my master's program also included software architecture, analysis of software artifacts, models, metrics, etc. Design patterns are a poor substitute for modeling languages.

Holub's rigid definition of certification would rule out medical licensing, college degrees, etc. Why hold software development to a standard of near-biblical absolutes?

"There's no right design and wrong design—just different designs." Garbage, unless one takes a definition of "right" and "wrong" so rigid as to be useless. Correctness of a program is defined with respect to a specification, and the specification with respect to the problem domain.

The most ridiculous statement of the entire column: "Modern programming bears more similarity to creative writing than to engineering or physics." Utter nonsense.

Holub's core recommendation is ridiculous: "We should really...drop hard-core mathematics...and replace it with English composition (which teaches you how to write large, complex documents like computer programs)." English composition teaches one how to write large, complex documents that are nothing like computer programs. Software development is detailed description, not social intercourse.

"The mathematics that is actually relevant—a bit of set theory and the like—is easily covered in a one-semester class." This ignorant dismissal disrespects the crumb of mathematics it deigns to address. To quote Robert Heinlein: "Anyone who cannot cope with mathematics is not fully human. At best he is a tolerable subhuman who has learned to wear shoes, bathe, and not make messes in the house."

When programming made first steps "toward" English, we got COBOL, from which we've yet to fully recover; obsession with minutiae of human language produces heinous code.

Holub assumes "changes" in programming are desirable fundamental changes; but exponential growth in demand for software increases, rather than decreases, the likelihood that change is convenient rather than improvement. "Best practices" are a poor substitute for principles. It's time we rediscovered the essence of what we do: logic.

Eric R. Kaun
Software Engineer

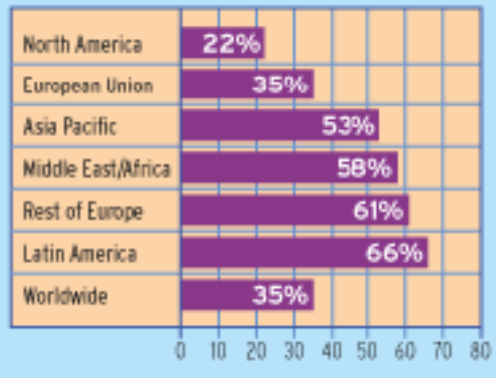
How Much of Your Company's Software Is Pirated?

DATA WATCH

Chances are better than 1-in-3 that some or all of the software installed on your customers' or colleagues' computers right now is illegal. That's according to a study conducted by research firm International Data Corp., and distributed by the Business Software Alliance, an international consortium of software vendors that works to combat software piracy.

Of the regions surveyed, the problem is worst in Latin America and European nations not part of the EU, where more than 60 percent of applications were found to be obtained illegally. The Middle East, Africa and the Asia-Pacific regions also are wrought with piracy; the study showed that more than half of software there was not legal.

Of individual countries, the study cited China, Ukraine, Vietnam and Zimbabwe as the worst perpetrators, each found with pirated software in 90 percent or more of situations.



The study came as a result of more than 7,000 interviews in 23 countries conducted in 2004, combined with 5,600 surveys from 15 countries conducted in 2003, and proprietary statistics for software and hardware shipments compiled by IDC.

Source: Business Software Alliance
www.bsa.org

Smart Clients: The Next Step In Software Development

Smart clients are the next evolutionary step for end-user applications—combining the best characteristics of rich clients and thin clients. As an end user, when you experience a smart client, you quickly appreciate the power and productivity benefits.

For example, if I use a sales-tracking application that integrates data from a back-end system and an Internet site (Web service) in a spreadsheet, and that application takes care of the retrieval and updating seamlessly—it's smart.

If it lets me work with the data offline and then when I get back online it handles the synchronization up to the central data source—it's even smarter.

If the IT team can perform application maintenance or an upgrade without my knowledge or participation, and it automatically manages intermittent connectivity and data synchronization to the central servers without my being aware of these activities—it's really smart.

Think about how much more competitive and efficient such an application could make a shipping delivery company, or a sales agent who works remotely, or a real estate agent who is turning properties in a hot market.

And consider what would happen if I were using a browser-based application to complete these same tasks. I'd need to be in the office, and the system would need to be available when I wanted to do the work. What if the network were experiencing difficulty? What if I were traveling? What if I were at a customer location? In each situation, I'd experience a loss of productivity.

For these reasons, many in the IT industry have begun to embrace the concept of smart clients, and many developers have successfully put them into practice.

A NATURAL EVOLUTION

Over the past four decades, the fundamental approaches used to build enterprise solutions have gone through some distinct changes. The first being the shift to the GUI client/server in the early 1990s, and the most recent being the shift to the Internet and a time-shared back-end server model. This latest shift was great for IT shops and for end users because it provided easy access to content never before available.

But the shift went too far as IT shops began trying to re-create sophisticated applications in a browser, and end users lost many of the GUI client/server advantages they had come to rely on. Gone were the benefits provided by feature-rich, high-fidelity UIs, and the advantages of offline functionality, local storage and system responsiveness (latency).

Today, enterprises are pressing to find equilibrium with smart clients. This so-called smart-client renaissance can be credited to advances in tools and technology that fundamentally eliminate, or at least minimize, the hassles of deployment and the ongoing challenge of software version management.

Thin-client applications continue to serve an important role in today's enterprise. They are effective for broad content communication, searching and a host of client applications for which always online is acceptable. However, when the goal for a particular application is to keep people optimally productive whenever and wherever they need the application, with the freshest data available at any given time, you need a smart-client application.

SEVEN TRAITS

So what exactly is a smart client? Smart clients are defined by seven characteristics. As demonstrated above, not all of these characteristics need to be present in an application for it to be considered a smart client, but the more complete and advanced these characteristics are, the higher the application's smart-client IQ.

First, a smart client leverages local resources and thereby provides productive, responsive applications by taking full advantage of the local software (like Microsoft Office) and hardware (like disk, memory, CPU, GPU). End users don't have to deal with long delays while the application repeatedly round-trips and refreshes on each page.

Second, smart clients are connected to the enterprise and are capable of providing timely access to live and relevant data and of allowing the application to take part in business and collaborative processes. For example, an expense reporting spreadsheet runs locally on a PC and is data-bound to a central SQL data store and/or a Web service.

Third, they are offline-capable and provide useful functionality when offline or in intermittent connectivity situations, allowing the user to remain productive. They intelligently synchronize when online is again established.

Imagine an inventory application that is data-bound to a central store and also replicates to a local data store. This enables a person to work continuously without regard to connectivity status so that modifications are made on the client and the central database synchronizes when online is available. The synchronization can be transparent to the end user such that he or she doesn't need to be aware of network status or the synchronization process.

Fourth, smart-client applications offer a high-fidelity UI and user experience that promotes increased end-user productivity by leveraging common UI metaphors and patterns.

Fifth, smart clients serve up intelligent deployment and updating capabilities, providing easy management of the application and allowing for seamless deployment and updating. End users are frequently ill-equipped to make installation decisions and updates are costly in terms of their productivity. Web application updates are largely seamless because the updates are made on a central server by a system administrator. This same update metaphor is now possible with smart-client application technology—for example, the application is deployed to a server and each time the local application opens, it checks for updates and pulls them down to the client.

Sixth, they provide a high level of security—from both hostile attacks and from unintentional human error.

And last, device flexibility is an option so that applications are tailored to the specific client device, making appropriate use of the screen real estate and user interface facilities and local hardware (such as pen and speech).

RENAISSANCE GOES ON

Admittedly, smart clients are a bit tricky to build today. Fortunately, with the technologies now emerging, most developers will find smart clients easy to build, deploy and maintain—which will further fuel this smart-client renaissance.

In the inventory application scenario above, the new smart-client tools and technologies make it possible to build such an application in days (versus months or years)—for example, attaching a spreadsheet to Web services, or data binding to a central server with a few clicks of a mouse, or making the application available for offline use with one line of code.

Additionally, IT administrators will be able to update these smart-client applications by simply copying the binary to a central location. It should be noted that the notion of smart client isn't defined by the platform or tools offered by a particular company, any more than a particular company served up the thin client or the rich client.

I believe the trend will continue toward smart clients because it's about the bottom line: Enterprises want the best characteristics of the rich client and of the thin client. They want to keep source data centralized and provide local as well as offline access to it. They want the productivity features of a high-fidelity UI and the ability to easily deploy updates. Applications that contain the best of both are the next step in the course of technological evolution. ▮

K.D. Hallman is Microsoft's general manager for Visual Studio Tools for Office System (VSTO) and Visual Basic for Applications (VBA).

SD Times
Software Development Times
June 15, 2005 – Issue No. 128

Editor-in-Chief
Alan Zeichick
+1-650-359-4763 • alan@bzmedia.com

Editor
David Rubinstein
+1-631-421-4158 x105 • drubinstein@bzmedia.com

Senior Editors
Edward J. Correia
+1-631-421-4158 x100 • ecorreia@bzmedia.com
Jennifer deJong
jdejong@bzmedia.com

Associate Editor
Yvonne L. Lee
+1-408-255-1153 • ylee@bzmedia.com

Copy Chief
Patricia Sarica
psarica@bzmedia.com

Art Director
Mara Leonardi
mleonardi@bzmedia.com

Columnists
Andrew Binstock
abinstock@pacificdataworks.com
Allen Holub
allen@holub.com
Larry O'Brien
lobrien@knowing.net

Contributing Writers
Shari L. Gould
Geoff Koch
Susan Messenheimer
Lisa Morgan
Esther Schindler
George Walsh
Carol Weiszmann

Publisher
Ted Bahr
+1-631-421-4158 x101 • ted@bzmedia.com

Associate Publisher
Charlie Shively
+1-508-893-0736 • cshively@bzmedia.com

Advertising Sales
Southwest U.S.
Julie Fountain
+1-831-476-1716 • jfountain@bzmedia.com
Northwest U.S./Canada
Paula F. Miller
+1-925-831-3803 • pmiller@bzmedia.com
Southeast U.S./Europe
Jonathan Sawyer
+1-603-924-4489 • jsawyer@bzmedia.com
Northeast/North Central U.S./Canada
Charlie Shively
+1-508-893-0736 • cshively@bzmedia.com
Advertising Traffic
Phyllis Oakes
+1-631-421-4158 x115 • poakes@bzmedia.com

Director of Events
Donna Esposito
+1-415-785-3419 • desposito@bzmedia.com

Director of IT & Manufacturing
Rebecca Pappas
+1-631-421-4158 x103 • rpappas@bzmedia.com

Director of Circulation
Agnes Vanek
+1-631-421-4158 x111 • avanek@bzmedia.com

Office Manager/Marketing
Cathy Zimmermann
+1-631-421-4158 x108 • czimmermann@bzmedia.com

Customer Service/Subscriptions
+1-866-254-0110 • service@bzmedia.com

Controller
Viena Isaray
visaray@bzmedia.com

Article Reprints
Lisa Abelson • Lisa Abelson & Co.
+1-516-379-7097 • fax +1-516-379-3603
labelson@optonline.net

BZ Media
BPA Worldwide

President
Ted Bahr
Executive Vice President
Alan Zeichick

BZ Media LLC
7 High Street, Suite 407
Huntington, NY 11743
+1-631-421-4158 • fax +1-631-421-4045
www.bzmedia.com • info@bzmedia.com

JUST YOU AND 1.9 MILLION OF YOUR CLOSEST FRIENDS

www.codeproject.com

The Code Project has everything you need for your Visual Studio .NET 2003 and Visual Studio 2005 Development. Visit www.codeproject.com and find out why we're your Visual Studio Homepage. The Code Project, the smart site.

Free Articles, Free Resources, Free Code.

premium sponsors:

Dundas Data Visualization

msdn magazine

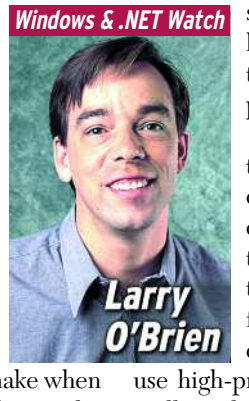
Visual Studio .NET is a registered trademark of Microsoft Corporation in the United States and/or other countries.

Global Mobile

Conviction is generally less interesting than doubt, but occasionally extremism can trigger a shock of recognition. A few weeks ago, the blogosphere buzzed about the release of Backpack, a Web-based PIM with a less-is-more feature set inspired by collaborative concepts such as those embodied in Wikis, Flickr and blogs. But I laughed when I realized how much I agreed with the comment "kinda nice...for a PC app. You know, so much effort being put into a dying platform, it sorta makes you sad."

Those were the words of Russell Beattie, a Yahoo employee who is my favorite evangelist for mobile development. It wasn't Windows that Beattie was dismissing (at least, not in this post), but desktops (a category that in his mind, I'm sure, includes laptops that can't stay continuously powered on for a complete workday). And, you know, it's an excellent point: If it ain't mobile, it ain't nothin'.

Now, in truth I think Backpack is a pretty intriguing product. I would try it out if I weren't invested heavily in OneNote (you can find links to my "Getting Things Done"-inspired configuration and other reference links for this article at www.knowing.net/footnotes.aspx #128). And since OneNote doesn't run on a phone, it too is probably disdained by Beattie. By my lights, though, my Tablet PC is a mobile platform: It's certainly most satisfying when running software (such as OneNote) that is specifically designed to take advantage of the pen. But of course the real market for mobility programming is those devices that fit in our pockets: PDAs and mobile phones.



There are PDA people and there are phone people. The PDA took off as a platform only when Palm introduced a product into which people could install new software. Phone people, on the other hand, have a "green button, red button" mindset; any functionality requiring the use of the softkeys is likely to languish.

The great mistake people make when it comes to mobility is conflating the confluence of the form factors with the confluence of the mindsets. Phone people may very well want more from their device than phone calls, but they insist upon a unified and consistent suite of capabilities, and they want their use of those capabilities to become the stuff of muscle memory.

PDA people, on the other hand, value the plasticity of the handheld—this minute it can be a phone, the next a calorie counter, and after that it can become a game console—and if they have a complaint about input modes, it's only that there still seems to be no way to accommodate a full 101-key keyboard on a device small enough to carry around.

There are 1.8 billion cellphone subscribers in the world, 400 million in China alone, but taking the mobility road to riches has proved to be quite a challenge.

Distribution issues aside, the technical problem with cellphones is that C and C++ continue to be the only way to unlock most of the potential. If you want to develop a forms-based application (a calorie counter, say), you can use high-productivity languages. But to really unlock the power of the handhelds, you'll almost certainly need to deal with the device's native resources, a necessity that pushes you toward C++, complicated build processes, and testing and compatibility matrices.

For Pocket PC and Smartphones, the first version of the .NET Compact Framework has provided a high-productivity route for those basic forms-based apps, but it had painful gaps, notably the lack of COM Interop, telephony APIs and integration with Pocket Outlook.

The .NET CF 2.0, a beta of which is part of the Visual Studio 2005 beta release, fills these and many other holes (primarily by including COM Interop, which is a whole lot easier than using P/Invoke to access APIs one method at a time). However, the .NET CF 2.0 beta is still far from complete; the very first scenario that I began to explore (a device-based voice recorder that would sync into OneNote on my Tablet) was beyond it. Luckily, I'd saved my bookmarks to the OpenNETCF Smart Device Framework, one of the most impressive open-source libraries available for .NET. The SDF includes great functionality, including the recording and desktop synchronization APIs that I needed for my scenario.

While the combination of the OpenNETCF SDF and the .NET CF 2.0 might provide for the marriage of PDA-person flexibility and phone-person consistency, Microsoft's mobile device market share is only about 16 percent. Microsoft hopes that will rise with the recently announced Windows Mobile 5 (duh!), but those hoping to "go wide" with their mobile software still face a fragmented market. I wonder how hard it would be to port Mono to Symbian? ▮

Larry O'Brien is a technology consultant, analyst and writer. Read his blog at www.knowing.net.

Presenting a FREE Web Seminar

Virtual Industry Panel: Achieving Software Build & Deployment Excellence

Date: Tuesday, June 21
Time: 2:00-3:00 p.m. Eastern
1:00 p.m. Central, 11:00 a.m. Pacific

Moderated by
David Rubinstein
Editor, SD Times

A panel discussion with industry experts who will talk about the secrets of build and deployment success. During this 60-minute live broadcast, our panel of experts from the configuration management and software development communities will address critical build and deployment issues such as:

- Transitioning to a more iterative development process
- Proven techniques for increasing reliability and reducing build/release errors
- Practical steps to shorten build times
- Effective support for distributed development teams
- Creating an integrated build/deploy environment using non-integrated tools.

Registrants will be invited to pose questions to panel members to get answers to their most pressing questions.

PANEL MEMBERS:

UTTAM NARSU, former Giga/Forrester industry analyst, systems architect, software developer, and consultant.
MARIO MOREIRA, Director/Architect of Technology, Fidelity Investments Systems Company, author of "Software Configuration Management Implementation Roadmap."
LEE FANCEY, Director of Configuration Management, Electronic Arts.
STEVE BERCZUK, Software developer and co-author of "Software Configuration Patterns: Effective Teamwork, Practical Integration."
MICHAEL O'ROURKE, Vice President of Product Development, BuildForge Inc.

Produced by
SD Times — The Industry Newspaper for Software Development Managers

Register at: www.bzmedia.com/webseminar

Sponsored by
BUILDFORGE — ADVANCING DEVELOPMENT

SD Times 2005 100

What we do on the inside.

Streamlined development process. XML data exchange. Distributed transactions across heterogenous data-sources. One-click security and non-repudiation. Process transparency. Source code generation. Advanced reporting. Easy adminstration. Custom datasources. HTML interface. Scheduling. Distributed endpoints. Data transformation. Guaranteed processing. Java and .NET support. "Best practices" separation of business model and implementation. Broad database support. Visual data extraction and loading. Easy deployment. Small foot-print. Embeddable. Brandable. Solution management. Process publishing. Large dataset support. Data valida-

What you do on the outside.

(click.)

The JNetDirect Business Interaction System

When you have multiple applications that need to interact, you need the JNetDirect Business Interaction System (JBIS). JBIS makes it simple to expose the functionality of applications to other developers. It provides you with discovery, run-time and post-deployment management services that make it easy to administer and support integrated applications. And most importantly, it's affordable. Simplify development, deployment and administration with JBIS. Visit our website at http://www.jnetdirect.com/jbis to find out more about why JBIS is the right fit for your business.

jnetDirect
Expert Software Components

Expert software components for expert developers.

www.jnetdirect.com • (800) 995-8534 • (703) 880-3800

Copyright © 2005 JNetDirect Inc. All rights reserved. All trademarks are property of their respective owners.

JavaOne and Stalinist Management

The annual JavaOne conference is coming up; this year, it's the last week in June. The conference catalog for JavaOne 2005 is actually heartening. My main complaint about all past JavaOne events, except the first couple, has been the lack of "how-to" sessions. Last year was a low point, with massive marketing hype drowning out whatever practical material was present, and there wasn't all that much practical material. Judging by the conversations I had with other programmers, I am not alone in feeling this way. To make matters worse, the lack of practical emphasis has been an ongoing complaint amongst attendees.

This year, Sun finally seems to have taken this criticism to heart. The current catalog lists 22 hands-on lab sessions that cover everything from client-side UI programming, to security, to enterprise topics like EJB. Of the 18 sessions in the Core Platform track, eight are advanced how-to sessions and three are tutorial sessions. Most of the remaining sessions in the track seem to be the usual too-high-level-architectural and history-of-the-JSR drivel, but I'll settle for a usefulness rating of 61 percent.

Other tracks seem equally practical in nature. It remains to be seen whether the actual conference can live up to the catalog, but I'm glad to see that Sun finally seems to get it; if you can't come away from a technical conference of this sort knowing how to do something that you didn't know how to do coming in, then the conference is a failure.

Changing the topic, a couple columns back ("The Terror of Code in the Wrong Hands," May 1, page 37), I talked about the software jihadists at the far left of the bell curve. To summarize: The top 5 percent of programmers are 20 times more productive than the "average," and the bottom 5 percent are actually destructive. When hiring, it's difficult to distinguish the bottom 5 percent from the bottom 95 percent, though. My main point, which I didn't make clear enough, was that the industry seems to be actively wiping out the top 5 percent through wrong-headed hiring practices and wrong-headed emphasis on specific technology.

The most disturbing of the e-mails I received concerning the article advocated a sort of Stalinist management that glossed over the problem by carefully feeding employees only that information that management likes. I quote:

I recently read your article "The Terror of Code in the Wrong Hands" as it was advocated as a must read by one of my co-workers.

I'm sorry if this seems harsh but I have asked him to not distribute your article around the office. I found your "20-to-1 rule" or as it used to be stated around here as "only the top 5% are excellent" theory to be outdated and a poor way to do business. I fortunately have now changed that perception here and people are now realizing the value of stewardship, training, optimism, and peer pressure.

It's not the fact I dispute necessarily, it's your outlook. This sort of pessimistic evangelism is exactly what companies fight against. It promotes a superiority complex amongst those who fall prey.

It's difficult enough to get these "experts" to invest in high potential low experience folks without articles such as this.

This letter was a scary combination of "right thinking" and "kill the messenger." The fact is that truly elite programmers are not the arrogant experts that the letter fears. Anybody who thinks they're God's gift to programming, who refuses to invest in co-workers, is by my definition, one of the jihadists.

I'm sorry if I seem pessimistic, but it's a hard fact that most companies have either entirely eliminated or severely cut back their training budgets in the past five years. They have replaced a hire-smart-people-and-train-them philosophy with outsourcing and laundry-list-based hiring that weeds out the smartest applicants simply because they don't know one of 15 technologies.

Frankly, I don't care how many EJBs you've written. What I want to know is: How fast can you learn how to write EJBs, and do you understand the architecture well enough to understand its weaknesses and code around them? I want to hire the programmer who talked his last company out of using EJBs because the technology was inappropriate, not the programmer who mindlessly churned out EJBs for a death-march project.

I, like the letter writer, believe that excellence is an acquired skill that can be achieved by training and mentoring. I see fewer and fewer companies willing to do that, though. If these trends continue, it's hard to be optimistic about programming as a profession in the United States. I find no value in irrational optimism. Without serious support on the part of upper management, it's simply not possible to develop an excellent staff from within. An excellent programming shop is created by hiring smart people and letting them work, not through optimistic thinking. ▮

Allen Holub is an architect, consultant and instructor in C/C++, Java and OO Design. Reach him at www.holub.com.

Virtualization: Why You Should Care

The latest fashion in IT computing infrastructure is virtualization, which is the ability to run multiple, independent instances of the operating system on a single hardware platform. This technique is old hat on mainframes where hardware and software combine to provide partitions.

Partitions are dynamic areas of memory in which an instance of the operating system and one or more applications are run. The mainframe's host OS virtualizes the system resources (like the network connection and I/O ports) such that the smoke and mirrors worked perfectly: The application is fooled into thinking it owns the whole machine.

The virtualization approach has several key benefits: flexibility, safety and good use of resources. Flexibility comes from the fact that different releases of the OS can be run side by side, so that old applications do not have to be updated. Safety comes from the way partitions work: They are sealed containers, so if a running app blows up, the damage is limited to the one partition. Other apps are not affected, nor is the mainframe itself destabilized. Good use of resources should be obvious: Mainframes can consolidate numerous servers and apps onto one system with an established reputation for stability.

For users of *x*86 hardware, virtualization has been a software-only proposition: notably VirtualPC from Microsoft and several products from VMware. These products are surprisingly good at what they do and, more important, they're very fast. When you're in a hosted session (called a virtual machine, which is an overused term, alas, and in this context quite different from a Java Virtual Machine) performance is good enough that you cannot tell you're using anything other than the real, underlying hardware.

Such packages, called VM managers or VMMs, were once actively touted to developers as a way for testing software on older versions of the operating systems. They are excellent at this work: You can test compatibility with DOS, Windows 3.*x* or OS/2 without ever leaving your workstation—likewise, various Linux distros and the many flavors of Berkeley Unix. They are a great portability testing tool.

My testing, though, relies on VMMs for a different purpose. I work on a Windows workstation. And unfortunately, Windows has a certain fragility when it comes to installing and uninstalling new software. Junk files are left behind, registry settings are changed, and even configuration of other apps (such as Microsoft Office or my browser) are tweaked. Who wants to deal with cleaning up all this mess and then wonder whether anything was unhinged in the process?

Not I. So, I evaluate new products in a VM session. In this way, the tested software never touches my registry, never molests my software, never clutters my hard disk. Upon exit, the virtual machine (including the OS instance, the applications and the virtualized hardware) are all stored in a single file, which is reloaded by the VMM should I want to start it up at a future date. When the VM session finishes, all changes have been made only inside that one file.

Other than that, my system is exactly as it was before I started my evaluation. When I'm done with the test, I take the VM file and burn it onto a DVD. That way, if I am ever asked to check something else about the tool I was testing, I can reload the VM file, start it up, and I am back in the environment in which I did the evaluation: the tool in front of me, the OS running. It's truly beautiful.

With the advent of malware, I am beginning to use VMs for extensive Web surfs. In this way, the malware never touches my system. And if spyware overwhelms a VM, I just blow that VM away, and load a fresh one. No harm done.

Virtualization software is back in the spotlight, but for none of the reasons I have just mentioned.

The reason is that virtualization gives IT departments much better use of their hardware. It's no secret that many systems today run at a few percent of processor capacity and network bandwidth. So, why not put hardware to real use running several of low-demand applications, each in its own separate space? This proposition has caught the eye of managers.

Another interesting use is load balancing. Run your server in several VM sessions. If one server comes close to maxing out, migrate a VM session to another server. This frees up resources for the overloaded system and puts a lesser-used system to work. Here, the VM represents a conveniently migratable workload.

You'll be hearing more about virtualization in the future. Intel has announced hardware support for VMMs in its upcoming processors, and several start-ups are working on tools to simplify virtualization. If you haven't tried the technology yet, give it a whirl. Once you do, I'm sure that you too will become a convert. ▮

Andrew Binstock is the principal analyst at Pacific Data Works.

The Next Four Horsemen

XML. SOAP. WSDL. UDDI. The Four Horsemen of the Web services apocalypse.

Their arrival on the scene was a revelation, spelling the beginning of the end of software creation as we knew it, even if we didn't know it then. These four specifications—for defining complex documents and data structures, for setting up the rules of communication, for describing Web services, and for finding them in a repository—heralded the dawn of a new (old) age of composite applications created from reusable pieces of code.

Industry Watch

Companies began to embrace the concept of Web services, trying them out internally at first, for fear of exposing too much of their intellectual property, or the identities of their customers. Right away, most decided, UDDI was extraneous. Since all of a company's code and data, or repurposed services, were held within the company's firewall-protected repositories, there was no need to discover services. To this day, it remains the one specification that is least implemented.

But as companies moved from the trial phase of Web services toward the mission-critical implementation, they saw that the horsemen didn't quite have enough giddyap. Differences in naming conventions, approaches to service-oriented architectures, even in the core definition of what a Web service is, have stifled the widespread adoption of this challenging but potentially business-altering technology.

The biggest promise of Web services was interoperability, both internally and externally. Anything using SOAP and XML, advocates claimed, could communicate and exchange information. But users quickly found that frameworks were needed to create these composite applications. So the catchphrase service-oriented architectures became part of the lexicon. Since the concept was new, many organizations turned to their integration and middleware vendors to get them started. But that created confusion, as some SOAs were built upon EII technologies, while others were built upon messaging middleware and the newly named enterprise service bus.

One thing common to any SOA implementation is the ability to manage services—yet this is not something that's implicitly spelled out in the original Web services specifications. Neither are security, reliable messaging, reliability nor any of a dozen or so topics now being tackled by the W3C, OASIS and other industry consortia. There is no clear, industrywide agreement on much of this work.

Creating interoperability among these different architectures has been tricky at best. Differences between services using RPC invocation or document binding styles caused some Web services consumers to be able to use one set but not the other. Another area of concern is complex data types. Tables are simple. XML data structures are way more complex, as the term "order" in an XML hierarchical data structure can have three lines, or five lines, depending upon the number of items purchased. Processing this on a large scale poses large-scale difficulties.

Now, there are even moves afoot to improve upon WSDL, as reported in the preceding pages of this newspaper. Some people find WSDL to be more complex than necessary, while others claim it lacks the semantic richness to express everything about a Web service that a consumer needs to know, such as dependencies, or what would happen to an application if that particular service were updated or changed.

The solutions for getting over these hurdles are in the works. OASIS is working on a solid definition of SOA and a reference implementation of that definition. BEA, IBM and Sun each have announced service plans for their customers trying to implement SOAs. Software AG has launched its SOA Competency Center, which will help its customers create SOAs. What would be helpful is if they all adopted a common set of terms, naming conventions and definitions. It certainly would make interoperability easier.

According to Theo Beack, Software AG's chief SOA architect, the notion of Web services has come full circle. Customers looking to implement SOAs need to know what services exist, where they are, and how to use them—or reuse them—in composite applications. "UDDI was the first step in discovering Web services," he said. Now, he's hearing more and more that customers think metadata and a repository of some sort is crucial.

He noted that Software AG and Fujitsu are working together on creating a Web services metadata repository. "We're gaining input into how customers would need to interact with the repository and what kind of metadata they think should be collected." The first release should be out later this year, he said.

Business process management also is playing more of a key role in SOAs. "Business analysts can model out a process but can't take it to completion," Beack said. There needs to be a way to tie together discovery of services and binding of services to the process, so business analysts can discover services during the modeling of the process and then select the service, Beack said.

Meanwhile, a company called Above All Software has invented a composition server that does algebraic composition of XML data. "It's as fundamentally important as a relational database server," said its CEO Roger Sippl, the former CEO of Informix. The composition engine, he explained, can talk to the arbitrary data structures and arbitrary business logic to pull together composite applications.

Business process management. Metadata repositories. Composition servers. Common conventions. Are these the next Four Horsemen? ▮

David Rubinstein is editor of SD Times.

BUSINESS BRIEFS

Borland's board of directors last month increased its stock buy-back program by US$75 million, bringing the total to $87.2 million and showing the board's confidence in the direction and strategy of the company, according to CEO Dale Fuller. As of March 31, the company has cash and cash equivalents of $230.7 million . . . Development framework vendor **Trolltech** announced it has closed a US$6.7 million Series B round of funding, led by European capital firms **Index Ventures** and existing investors **Teknoinvest** and **Northzone Ventures**. The company will use the money to try to expand in the markets for embedded Linux and cross-platform desktop applications. Trolltech's flagship products are Qt, the desktop cross-platform development framework; and Qtopia, an application platform and user interface for Linux-based consumer devices.

EARNINGS: Serena announced GAAP-based revenue of US$61.3 million for its fiscal 2006 first quarter ended April 30, an increase of 82 percent over the same quarter a year earlier, it said. Net GAAP income for the quarter was $8.1 million, or 17 cents per share, an improvement over a net GAAP loss of $4.3 million, or 11 cents per share, in the first quarter of 2005 . . . **Novell** reported fiscal 2005 second-quarter revenue of US$297 million but a net loss of $16 million, or 4 cents per share. The numbers were aided by favorable currency exchange rates that boosted Novell's revenue by about $8 million year over year, the company said. "Our results this quarter reflect the significant investments we are making to reposition Novell," said CEO Jack Messman in a statement. Novell gained $8 million of its revenue from subscriptions of its SUSE Linux Enterprise Server . . . Real-time operating systems vendor **Wind River Systems** announced fiscal 2006 first-quarter revenue of US$61.8 million, a 17 percent increase over the $52.8 million posted in the same quarter a year earlier. GAAP net income was $1.9 million, or 2 cents per share, compared with a net loss of $3.8 million, or 5 cents per share, in Q1 2005. ▮

CALENDAR OF EVENTS

eBay Developers Conference — June 21-22
San Jose
EBAY
ebaydevcon.com/devhome

JavaOne — June 26-30
San Francisco
SUN MICROSYSTEMS
java.sun.com/javaone/sf

Macworld Expo — July 11-14
Boston
IDG WORLD EXPO
www.macworldexpo.com/live/20/

Black Hat USA — July 23-28
San Francisco
BLACK HAT CONSULTING
www.blackhat.com/main.html

SIGGRAPH — July 31-Aug. 4
Los Angeles
ACM SIGGRAPH
www.siggraph.org/s2005

Open Source Convention — Aug. 1-5
Portland, Ore.
O'REILLY MEDIA
conferences.oreillynet.com

LinuxWorld Conference & Expo — Aug. 8-11
San Francisco
IDG WORLD EXPO
www.linuxworldexpo.com/live/12

HP World Conference & Expo — Aug. 14-18
San Francisco
INTEREX
www.hpworld.com/conference/hpworld2005

SHARE — Aug. 21-26
Boston
IBM
www.share.org

FileMaker Developer Conference — Aug. 28-Sept. 1
Phoenix
FILEMAKER
www.filemaker.com/developers/devcon

EclipseWorld — Aug. 29-31
New York
BZ MEDIA
www.eclipseworld.net

Application Development Summit — Sept. 12-14
Dallas
GARTNER
www.gartner.com/2_events/conferences/ad7.jsp

Embedded Systems Conference — Sept. 12-15
Boston
CMP MEDIA
www.esconline.com/boston

For a more complete calendar of U.S. software development events, see www.bzmedia.com/calendar.

Information is subject to change. Send news about upcoming events to events@bzmedia.com.

BZ MEDIA WEB SEMINARS

Virtual Industry Panel: Achieving Software Build and Deployment Excellence — June 21
Time: 11 a.m. Pacific (2 p.m. Eastern)
BUILDFORGE AND SD TIMES
www.bzmedia.com/webseminar

Software Development Times (ISSN #1528-1965, USPS #001-9625) is published 24 times a year by BZ Media LLC, 7 High Street, Suite 407, Huntington, NY 11743. Periodicals postage paid at Huntington, NY and additional offices. POSTMASTER: Send address changes to SD Times, 7 High Street, Suite 407, Huntington, NY 11743. SD Times is a registered trademark of BZ Media LLC.

Altova® UModel™ 2005 – The starting point for successful software development.

ALTOVA® umodel™ 2005

Visualize works of software art

Draw on UModel™, the simple, cost-effective UML® 2.0 modeling and code generation tool from Altova®

Exhibited in Version 2005:

- Intuitive UML drawing capabilities with helpful design aids
- Java code generation from UML diagrams
- Reverse engineering of UML models from existing Java applications
- Round trip synchronization of output after amending generated objects

Utilize UModel 2005 to interpret and devise software designs. Decode Java programs into clear, accurate UML 2.0 diagrams, or draw up your application strategy and generate standard Java code from your plans. UModel makes visual software design practical for programmers and project managers. With customizable templates and styles, built-in entry helpers, unlimited undo, and many other artful features, getting started with UML has never been easier. Take the mystery out of UML!

Download UModel™ 2005 today: www.altova.com

Join us at JavaOne, San Francisco **Booth #401**

UML is a trademark or registered trademark of the Object Management Group, Inc. in the United States and other countries.

ALTOVA®

For the leaders in your company, fast access to accurate and relevant data can be the difference between a validated and a gut-level business decision. With Embarcadero's Model-driven Data Integration solution, you can reliably integrate large volumes of data in a matter of weeks, not months. To learn more, visit us at www.embarcadero.com/mddi.

EMBARCADERO IS MODEL-DRIVEN DATA INTEGRATION.

©2004 Embarcadero Technologies Inc. All rights reserved.

EMBARCADERO TECHNOLOGIES.
we make data work™